The Builder.

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Carlisle Cathedral in 1506.....Drawn by Sir Chas. Nicholson, Bart., F.R.I.B.A.

Design for a Hotel for a City Site (Hon. Mention for Soane Medallion, R.I.B.A., 1907).....By Mr. A. J. Pitcher.

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The Architectural Sense.

THE heading of this article was the title of a lecture delivered last week by Mr. Halsey Ricardo to the County Council Central School of Arts and Crafts. The lecture was of that suggestive character which appeals to all students; a panegyric upon the past, suggestive by inference for the present; stirring the imagination to see below the surface to the thoughts and aspirations behind the material thing. Time was when much that Mr. Ricardo said would have been the merest platitudes; when architecture spoke direct to the people; when the beauty of architecture and the crafts was part of the joy of life and needed no elucidation. It was the art of the people. Now we all look back to that period at one time or another; we must look back to it if we only wish to form an intelligent opinion other than mere likes and dislikes—to drink at the well of inspiration; we must look back to the times of simpler emotions and less complex conditions of life, when art meant something entirely human, friendly, and sincere to every man; we must study the past or we shall be lost in the present, and see no way for art. What we cannot do is to get back to the conditions which produced that work, to desire to do so is to stultify ourselves.

That is a point which Mr. Ricardo did not make. Too many lectures leave the same impression upon students; their enthusiasm is damped down by the pessimism of the present; a little more enthusiasm in probing the conditions, a little more ardour in coping with the difficulties, is what is required of students of art to-day. No conditions can have been more daunting than those under which Michael Angelo worked; he grumbled enough at the obstacles in his way, but he did not let them deter him from the objects of his life. We cannot by taking thought get back to the childhood of modern civilisation or the *naïveté* of mediæval life; nor to that self-conscious period of intellectual Renaissance which took its place.

Our heritage is more goodly than theirs, and it needs more skill and more insight to carry on the tradition. Some of the daring which the great master architects and masons showed would not be out of place, but it must be the daring of highly trained men with the thorough mastery of the problems and the means of expression at their fingers' ends; originality must be founded on knowledge; no eccentric departures without reason or good taste will solve or further the problems of current architecture. The architectural sense would indeed seem to be lacking, but not in the way which Mr. Ricardo would have us believe; it is probable that we appreciate the qualities shown in the great periods of architectural development as fully as at any time in history; that what we lack is the appreciation of our own opportunities and the special obligations of our own time.

Mr. Ricardo implied that the "architectural" sense was absent at the present time, but was common to both the great periods of life, and he traced its development from its expression in a Gothic Cathedral down to that of Somerset House. The "architectural sense," he said, was national, not individual, the expression of the wish of the people; it grew less and less forceful with the wider activities and development of the nations, till at last—in this island at least—it finds a meagre and starved expression in educational and scientific establishments, such as Board schools and hospitals. Mr. Ricardo likened the operatic and orchestral performances of the present day to the works of art of bygone times. Both he attributed to the people rather than the individual, both showed a passionate longing for collective expression of the highest human instincts. This estimate has some bearing upon the problem which faces the well-wishers of architecture at the present time.

That the architectural sense does not now find collective expression in our cities is an obvious fact; what is done is the result of the energy of a minority, which is frequently submerged by the bane of individualism through which we are passing, or on which we are entering. Is there not much unnecessary confusion caused by the nomenclature of styles and periods? All those periods of art which are now ticketed and pigeonholed in the popular mind are intimately connected in fact. In so far as they are alive, human and sincere, they breathe

the same spirit; in so far as they are ignoble and insincere they cease to have any meaning for art, other than that of warning. They have historical significance, just as the building or architecture which is being done now will have a significance to future generations. The state in which we find ourselves is due to historical changes which have taken place with a rapidity surpassing that of any period in the history of the world. We are too close to these changes, too much part of them, to see them in their proper proportion, or to foresee their outcome. To artists it is a time of perplexity and anxiety, or at least it is to those who by nature or education lack the perception of the enduring character of art.

If the architectural sense is a national and not an individual sense, as Mr. Ricardo seems to imply, it surely received its severest set back with the Renaissance. The Renaissance is an art not understanded of the people; it is the art of a class or of the individual. Its basis is that of scholarship rather than of religion. Learning and scholarship may become a religion, but neither has anything in common with the primitive instincts of mankind. Art has its foundations in the mysterious and the sublime; as it is analysed and brought down to fact and rule and orderliness it retires in favour of the engineer and the man of science. As a matter of fact, it would seem that the days of great classical scholarship are on the wane; education becomes more general, more scientific, but less profound; there is a general feeling that our fathers were better educated men than are we of this generation. While this is a matter of regret on its classical side, it may have a tendency for good on the artistic side. Art that is dependent upon scholarship alone is always an exotic, and cannot be national in character. There is in many modern tendencies more of the northern or Gothic spirit than that of ancient Rome.

Both the art of the Middle Ages and that of the Renaissance have the architectonic element; of this the Gothic cathedral is the extreme expression. It is doubtful whether it is correct to attribute the architectural sense to the former time. Was it not rather that everything of that period expressed a harmony of beauty and romance? The architectural sense would seem to be rather the expression of a class or of an individual. Its concrete expression is not to be found in Eastern or Northern XIIIth century architecture, but rather in that of classic antiquity and the Renaissance. It is the outcome of the pride of citizenship rather than of inspiration; the influence of Roman civilisation. It is illustrated alike in the great town and guild halls of the Netherlands, and in the modern city architecture of Paris or Berlin. We are less affected by this sentiment than our Continental neighbours. There is a tendency to take our patriotism too much for granted; the individual goes his own way, holds his own opinions, and perhaps prides himself on their originality. Kipling has shown us something of this tendency in several of his ballads.

In France and Germany the bonds are more tighly held; possibly they are newer and less tried. Paris, Vienna and Berlin illustrate this in the orderliness of their great municipal and architectural characteristics. Possibly they have got to pass through the same phases—with national modifications—of thought and expression which we are experiencing. Paris owes something of its monumental character to Baron Haussmann; Berlin will owe much to its autocratic rulers. These outside, or class influences, will have less effect with the consummation of modern developments. Already in both cities there are signs of innovation and individual freedom from restraint and precedent. If we nearly lost our building tradition, they may yet imperil theirs.

Nearly all the illustrations of the quality which Mr. Ricardo took for his subject are the examples of individual work of architects of the great Renaissance school. In Italy, Sanmichele, Michael Angelo, and Bernini; at home the works of Inigo Jones, Wren, Vanbrugh, the Woods of Bath, the Adams, and Chambers.

But had they the voice of the people behind them? It is doubtful; it was the power of a class that produced the great work of the Renaissance period, and in England that class was not sufficiently powerful to go the length it did abroad. It could not push through Wren's famous scheme for rebuilding the city of London after the fire. A wise autocracy might do a great deal for our cities, but it could not alter national characteristics or revive an art. The art must come from within, it will find its expression in one direction or another; when the conditions are unfavourable or insufficiently mastered by its votaries—and that surely is too often the case at the present time—the highest expression will be in some other medium; in ways and walks of life unaffected by the machine-like conditions of the modern city, such as music or the art of building country houses. If posterity decides not to congregate in cities except for work, but to live as far from them as possible, fresh conditions will arise that may produce changes as far-reaching as that of the introduction of machinery or the factory.

While we all desire to see fine architectural schemes carried out in London, such as adorn Paris, Vienna, and Berlin, it does not follow that such would solve the problems of our city architecture. The autocratic power necessary for such a consummation is not really compatible with the growth and development of the community. Many of the grand conceptions of the Renaissance have ceased to have any meaning for the present other than that of historical and antiquarian significance.

It would seem that after learning what we can of the works of the past our problem is to produce fit, and, as far as possible, beautiful building, so far as it is based on the elements of permanence and sincerity; and in so far as it is noble in intention, so far it will be judged worthy of posterity. If will be an index to what is best in the history of the period and may show the beauty of its attributes. It will be a different beauty to that of the works of the past, not necessarily less admirable, any more than the beauty of one great period of art excels that of another.

BATH ARCHITECTURE.

PUBLIC baths are for the most partly regarded as a purely practical problem of economic arrangement and heating; and under the general title above we include all these practical considerations, which are part of architecture. Yet when one considers how architecturally suggestive a problem is a large swimming-bath, both for interior effect and characteristic exterior expression, one cannot but wonder that so little seems generally to be made of this suggestiveness in the architectural treatment of baths. Externally, a baths building in general might as well be a Free Library, or other such analogous institution, for all that its appearance and architectural treatment suggest.

This is the initial idea put forth in Mr. Cross's excellent and exceedingly practical treatise on the subject.* In respect of monumental character of design, in the first place, he contrasts with the magnificent and durable structures of the Romans our economic, uninteresting, and more or less perishable buildings in which no architecture in the higher sense of the word is usually attempted; the building being often carried out by the Borough Surveyor, after a tour of inspection of some existing bath establishments, in a scheme which naturally embodies many of the defects as well as the advantages of the buildings that have been inspected. And he suggests that whereas we are now constantly spending more and more on our hospitals, which new information in regard to hygiene may render out of date before long, it would be a point of wisdom to save money on these and spend it more liberally on monumental architecture for baths, in regard to which we do at least know pretty well what we want, and the conditions of which are not likely to be materially altered by new discovery. There is logic in this, especially when we consider that hospitals are buildings of a sad necessity, dealing with infirmities and afflictions of human nature which we would gladly see stamped out and extirpated; whereas the swimming bath belongs to the joyous and healthy side of life, and is of perennial value. But whether hospital architects and hospital committees will see it in the same light may be doubtful.

Besides the question of monumental structure there is that of the right kind of architectural treatment. As Mr. Cross says—"The typical public baths establishment, comprising a two or three-storied brick or stone building fronting the principal street, containing on the ground-floor the principal entrance or entrances, and on the upper floor a few small rooms for residential or other administrative purposes . . . does not present great architectural possibilities to its designer": as already observed, it might be any other kind of public institution. As a swimming-bath can always be sunk below the ground

* "Public Baths and Washhouses: A Treatise on their Planning, Design, Arrangement, and Fitting." By Alfred W. S. Cross, M.A., F.R.I.B.A. London: B. T. Batsford. 1906.

level, the exterior architectural expression of such a building should be that of a one-story building of what be called the classic screen type—the more refined and the more classic the better suited to the associations and history of the bath. Messrs. Wills & Anderson's competition design for the Chelsea Baths, which is illustrated in the book, is a building to some extent of this type, and is a much better architectural treatment of a bath building than we generally see erected; had it been more classic and monumental in character it would have been still better; but advertised limits of cost probably prevented that.

The interior of a large swimming-bath is so suggestive for architectural treatment that it is quite melancholy to see how little is made of it. One can imagine how beautiful an interior might be made of it, with a colonnaded loggia round the water, and the dressing-boxes and corridor screened behind it, instead of the row of wooden doors that we generally see—too often in dark wood, which produces a heavy and uninviting effect by its reflection in the water. Everything in a swimming bath should be bright in colour and surface.

Two plans given in Mr. Cross's book, one that of Messrs. Wills & Anderson just referred to, the other his own plan for proposed baths at Finsbury, suggest something new in the way of the interior approaches. Messrs. Wills & Anderson show a pretty large columned entrance-hall, with staircases on each side leading respectively to the women's hall and the men's hall on opposite sides. Mr. Cross shows in his Finsbury plan an open courtyard or atrium with a loggia round it, and the entrances to the swimming-bath at the inner end of the atrium. The men's and women's slipper-baths are placed along the two long sides of the atrium, lighted from the loggia. Both these would be effective approaches, but both have the defect that both sexes and both classes of bathers enter by one external entrance; in Messrs. Wills & Anderson's plan the entrance-hall is common to all, and in the men's hall first and second class are mixed. In Mr. Cross's plan all have to enter first by a long corridor 10 ft. wide, before they reach the atrium and divide off, men to the right and women to the left. We hold that there should always be separate entrances from the street for men and women; and that where possible, at any rate in a large establishment, there should be separate street entrances for first and second class. It depends in some degree on the neighbourhood in which the baths are built; but in those in what, for want of a better word, may be called an "upper-class" neighbourhood, the people who belong to that class do not care to jostle with the others in the same lobby; still less do ladies, and young ladies especially, like a promiscuous street entrance for every one.

One of the improvements which Mr. Cross wants to see is larger waiting-rooms, and rooms in which people may use hot-water and soap before entering the swimming-bath. Of course this, again, would apply to one class more than another; the man who duly takes his bath at home every morning may consider that he is quite fit to enter the swimming-bath without any such local preparation, and would in fact be rather offended to be supposed otherwise; but the point is one to be considered. Another innovation, which is illustrated in Mr. Cross's Haggerston baths, is the placing of the seats for spectators of tournaments, etc., in graded tiers rising from near the edge of the bath, the dressing-boxes and their corridor being placed at a higher level behind the spectators' seats, with stairs down to the bath at intervals. Mr. Cross is perfectly correct in saying that the flat-floor gallery usually formed *above* the dressing-boxes only allows the front rank of spectators to see the whole swimming-pond, while on the Haggerston plan they can see everything at their ease. It takes the bathers a good way from the water, but we are told that at Haggerston no complaint has been made on this score; and it has the advantage that the bathers only come on to the margin of the bath proper after undressing, and do not bring the dirt on their boots right in to the bath. In the plan of the Battersea Public Baths, by Mr. J. W. A. Hayward, C.E., this desideratum is effected in another way, by turning the dressing-boxes with their backs to the bath and opening on an exterior corridor, whence the bath is reached by stairs at the middle and one end. The drawback to this is that it makes inspection difficult. The usual arrangement of the boxes along the side of the bath is no doubt pleasanter for the bathers, who one would think were the people to be first considered; but the Haggerston arrangement of the spectators' seats may be desirable in baths where a great number of swimming entertainments take place. We understand that at the Haggerston baths, so far, there is only such an entertainment once a year; and in that case the immediate convenience of the bathers is sacrificed without quite an adequate cause; still, the idea is worth consideration.

Every plan in the book in which there is a permanent women's swimming-bath shows this much smaller than the men's bath. This seems to be a survival from a time when few women swam; so many ladies are good swimmers now that the distinction in size seems out of date, and should be discontinued. If there are fewer in number than the men, it must be remembered that it is not a mere question of space but of having a long stretch of pond without turning; and we do not see why lady swimmers should have their prowess cramped in a short bath.

An important point is touched upon in the chapter on "Slipper-baths and lavatory spray," where a good deal is said in regard to the superior economy of water and (it is asserted) cleansing power of the spray bath; the reason given for the latter being that the water runs off with the impurities washed away from the body, while in the slipper-bath the bather washes them off into the water in which he is and continues to be for perhaps for some little time. On the other hand, we may quote the opinion of a very eminent medical man that "there is nothing like getting *into* water." Hygienic authorities must settle this point between themselves. Of the comparative economy of water (and of time) in the spray bath there is no question.

Mr. Cross's book contains a valuable and suggestive collection of plans, sections, and constructional details of a number of baths buildings, and a mass of information in regard to structural and mechanical detail generally. It is a quite excellent book of its kind, and one for which his brother architects ought to be grateful to him.

NOTES.

Labour Returns.

DESPITE the fact of the severe weather experienced in January, the labour returns for that month show a general improvement as compared with those for January last year. The building trade is, of course, the first to suffer from weather conditions, and it has been seriously affected, although plumbers and carpenters have been fairly employed. The increase in rates of wages has been chiefly confined to miners; out of 450,000 people enjoying an increase of wages 400,000 were miners, and the mining industry has been very active. As was to be expected, the "legislative fertilisation" has not been without effect on trades' disputes, the crop has already responded, and forty-one new disputes commenced in the month as compared with seventeen in January last year, and 11,424 more workpeople were affected, but the aggregate duration of all disputes—167,100 working days—was less by 46,500 working days than in January, 1906. This may account for the fact that, despite an increase in strikes, the number of workpeople unemployed compares favourably with last year, the figures being 4·2 per cent. as compared with 4·7. This is a sufficiently large percentage in a period of increasing trade prosperity, but it must be remembered that nowadays increased wages do not mean increased employment, as was the case some years ago. The trade union principle of a uniform rate of wage in each branch of industry affects the operation of the law of demand and supply.

Fictitious Portland Cement.

AS DEFINED by the British Standard Specification genuine Portland cement is prepared by intimately mixing calcareous and argillaceous materials in chemically accurate proportions, burning them at a clinkering temperature, and grinding the resulting clinker. For the conduct of these operations watchful care, skilled assistance, and expensive plant are necessary. The consequence is that genuine Portland cement as an artificial product from beginning to end is far more expensive than "natural" cement made by the simple process of calcining and grinding rock which contains in variable proportions constituents similar to those used in the manufacture of Portland cement. Some examples of rock happen to combine the correct proportions of the essential ingredients, but, as pointed out by the author of a pamphlet published under the title of "Fictitious Portland Cement," the percentage of rock of even fairly accurate composition is very small in any of the quarries in Belgium and France, where

natural cement is largely produced and used. The unfortunate thing about cement of this kind is that, while sold in the home market as *Chaux Hydraulique* and *Ciment Naturel*, it is largely exported to Great Britain fraudulently labelled as "Portland Cement" and "Best Portland Cement." As we have pointed out on previous occasions, the Merchandise Marks Act affords no protection against this reprehensible practice, and the only means by which cement users can protect themselves is to specify a well-known British brand. The adoption of this course will provide a clear remedy against the substitution of dangerously inferior material by confiding contractors, who seem to think anything may be used so long as it is cheap and is invoiced as Portland cement by unscrupulous exporters and, we are sorry to add, importers.

Specific Gravity of Portland Cement.

A TEST of Portland cement which has been generally accepted as a means of ascertaining whether the material has been properly burned is to determine its specific gravity. The validity of this test is seriously questioned by Mr. D. B. Butler in a paper contributed to the *Proceedings* of the Institution of Civil Engineers, and now published in pamphlet form. The author has recently made the discovery, to his own surprise, that after ignition at red heat to expel carbonic acid gas and water, the specific gravities of various qualities of cement are so nearly identical as to render the specific gravity test of little or no value. Preliminary experiments with thirty different samples having specific gravities ranging between 3·026 and 3·138 showed after ignition a difference of only 0·016, which is well within the range of experimental error. As a test of the generally accepted theory, Mr. Butler obtained twenty-eight specimens of well-burned and under-burned clinker from various works, and found that the under-burned samples had a much lower specific gravity, when they had absorbed an appreciable amount of water and carbonic acid gas, than the well-burned samples. But after ignition at red heat the specific gravities of the well-burned and the under-burned material were practically identical. Having investigated the subject further by an even more careful series of experiments, Mr. Butler was able to corroborate the previous results in every respect. He found also that given the specific gravity of the ignited sample and the percentages of water and carbonic-acid gas expelled, the specific gravity of the unignited material could be calculated with a fair degree of accuracy. From the investigation here mentioned it seems to be clear that the only way in which the specific gravity test can be usefully employed is for the purpose of corroborating evidences of slag and other adulterants.

Artesian Wells.

ORIGINALLY applied to designate the form of flowing well used for a long time past in Artois, the Province of Northern France corresponding to the Department of Pas-de-Calais, the term artesian well is sometimes erroneously used to indicate any deep-bored well. The practice originated in the United States, and in consequence of the increased interchange of literature between that country and Great Britain it has begun to take root here to some extent. This question of nomenclature is discussed by Mr. M. L. Fuller, of the United States Geological Survey, in a recent Water Supply and Irrigation Report, and we are glad to find from that publication that the members of the Division of Hydrology of the Survey have agreed upon definitions which should have the effect of restricting the use of the term "artesian" to wells, areas, basins, and systems where water is encountered or confined under pressure at a level lower than its static head. At present, as Mr. Fuller says, no definite meaning can be attached to the word artesian in American publications, unless a definition is given in the same paper, and it is even found that the same writer employs the term differently in different publications. It is very desirable that a clear distinction should be recognised between wells in which the water rises to the surface by hydrostatic pressure and those from which the water has to be raised by pumping. .

The Law of Light.

WE have received from Mr. H. A. de Colyar, K.C., a reprint of the learned paper, which was published in the *Journal* of the Society of Comparative Legislation, on the "Law of Light." It gives the reader, too, a very substantial amount of legal information on the subject, not only in regard to English law, but also in regard to the law of other countries. We think the author has done well to issue this paper, having regard to the amount and accuracy of the legal knowledge contained within its pages. The paper is not of a character to comment on, because it states the law without reference to the reasons for it, and, therefore, we must content ourselves with these few observations upon this publication.

Holyrood Chapel.

THE Edinburgh Architectural Association have passed a resolution, at a meeting on the 13th, to the effect:—

"That, looking to the public interest that has been aroused on the question of the repair and restoration of the Chapel-Royal, Holyrood, through the intimation of a legacy of 40,000*l.* for these purposes by the late Earl of Leven and Melville, it be remitted to the Council to report upon the following points, viz.:—What remains of the structure exist; 2, the conditions and capabilities of the parts remaining; 3, whether the evidence of these parts is sufficient to enable a satisfactory repair and restoration of the structure to be made."

The resolution was proposed by Mr. James Bruce, a lay member of the Association, who in the course of his speech in support of it said that what he desired that the Council should report on was—first, what did remain of the original building; (2) what condition those remains were in; (3) was there enough remaining to enable parts that had gone to be supplied as they originally were; and (4) what were the capabilities of the remains of the structure; by which we understand him to have meant that if the existing remains were in such a condition as to be endangered by meddling with them, the Association would disapprove of the attempt being made. We cannot say that we think the Association are wrong in trying to set on foot an investigation of the state of the building on their own account, but we think the suggestion of enquiring whether enough remains to enable the parts that were gone to be supplied "just as they originally were" is somewhat alarming, and seems to point to the worst kind of so-called restoration by attempted imitation of ancient work. We are inclined to think that Mr. Lethaby's Report will be found to represent the true state of the case, and that "let well alone" will be the best policy.

Ayr "Auld Brig."

SOME fifteen months ago there were reasons for fearing that the Town Council of Ayr might after all persist in their determination to build a new bridge in replacement of the historic structure condemned by their Surveyor. Since that time, however, several projects have been submitted for repairing the old bridge; the Preservation Committee have obtained an undertaking from the Town Council that its restoration may be undertaken subject to the receipt of a report from the Borough Surveyor that the proposed works would make the bridge secure for public traffic for the future, and the same committee have raised 9,500*l.* of the 10,000*l.* necessary for the execution of the project. Messrs. Simpson & Wilson, the engineers for the preservation, propose that the arches and spandril walls shall be made good and grouted with cement injected under pressure; that a new central spandril wall and cross walls 3 ft. thick shall be built in concrete; that a pit shall be sunk in the centre of each pier down to 8 ft. below low-water level, so as to permit the masonry to be thoroughly grouted under sufficient pressure to make sure that the whole is made perfectly solid; that the piers and cutwaters shall be securely underpinned; that after the parts exposed have been treated and all spaces filled up as necessary concrete arches shall be constructed between the spandrils and over the pits in the piers; and, finally, that the upper surface of the bridge shall be asphalted, so as to prevent water from getting into the work. So far as we are in a position to judge, this programme ought to make the bridge perfectly safe. Probably the Borough Surveyor of Ayr is equally satisfied in his own mind, but in the report to the Town Council, dated February 5, he asks that his definite assurance on the point may be deferred. This is not a surprising request on the part of one who had previously recommended the demolition of the old bridge and who has nothing to gain by assuming responsibility for the success of a preservation scheme devised by other engineers and to be carried out by contractors under their control. It seems to us that the Council were expecting too much when they asked for the assurance in question, and now seem to have realised this fact, for at the last meeting, on being informed by the Chairman of the Preservation Committee that the necessary funds would be forthcoming by the end of March, they decided without further ado to hand over the bridge for the work of preservation to be commenced forthwith.

Trinity College, Cambridge.

UNDER the testamentary dispositions of the late Lord Grimthorpe, a legacy is left:—

"For a new clock in the Great Court to be made by Joyce of Whitchurch, or Smith of Derby, or Potts of Leeds . . . with my gravity escapement, and no figures on the dial, and either two or three larger bells, by Taylor of Loughborough, instead of the present bad ones, and a tubular weather-cock on the tower, like that at Batchwood [his house near St. Albans] to be made by Smith of Derby, and also for any necessary alterations to the building of that tower."

Trinity men will be very jealous of any interference with the clock. The tower mentioned by Lord Grimthorpe is, we presume, that on the north side of the Great Court, which now carries the clock and dial and a bell-turret. Standing at the west end of the chapel, it is known as King Edward III.'s Gate, and was removed to and rebuilt in its present position in 1601 by Dr. Thomas Neville, Dean of Peterborough, appointed Master of Trinity in 1593. Neville built the western Court, since modified by Essex, which bears his name, the Hall, and the fountain; he also formed the Great Court by shifting Edward III.'s Gate from near the spot now occupied by the sundial and by clearing away the buildings of Michael House, Fyswicke, St. Katharine's, Tyler's, St. Gregory's, and Crouched Hostels, and St. Margaret's Hall, which clustered around Le Foule-lane (north and south), and King Childer's-lane passing (west and east) from the river-wharf to Trinity-street, southwards of the Great Gate, built in 1518-25, and between the sites of the sundial and fountain.

Dudley Gallery Art Society.

THE present exhibition of the Society, at the Alpine Club room, is one of the best we have seen. We remember when these exhibitions consisted almost entirely of works of respectable mediocrity; but a certain number of artists of real originality have begun to make their influence felt. Miss Janet Fisher treats architectural subjects well, as in "A Venetian Doorway" (1); and Mr. David Green's "A Spate" (2) is really fine work on a small scale. The style of the President, Mr. Bruhl, is a little peculiar in its cold grey tone; but "Leigh" (42) is a fine and effective work. Among other things we notice are Mr. J. Powell's "Wareham" and "Stoborough Common" (11 and 17); Mr. Duassut's "Wintry Weather" (4); Miss Margaret Bernard's masses of hedges and brightly-lighted roadway at "Sway, Hants" (33); several charming drawings by Mr. Newton Benett (7, 29, and others); Mr. Torromé's "Sonning Backwater" (40); Mr. Stormont's "Sand Dunes" (97); Miss Bernard's "Eling Quay" (104), and Mr. David Green's "On a Yorkshire Moor" (154), perhaps the finest thing in the exhibition. Mr. Cafe's architectural subjects are well drawn and conscientious, but a little hard. One of the screens shows a number of interesting studies by Miss Lucy Kemp-Welch. The failures of the exhibition are mostly the very ambitious works, in size and subject.

A Chance for an Advertisement.

THE "Methodist Publishing House" have circulated a letter among architects pointing out that the Wesleyan Methodist Church is now very active in the erection of churches, schools, etc., and that architects who desire to bring their talents before this particular class of possible clients will find the *Wesleyan Methodist Magazine* an excellent medium for making themselves known, and that by a 10s. advertisement they may "probably be able to secure a share of this most valuable business." As the authors of the circular regard architecture as a "business," it is perhaps natural that they should imagine that architects desire to advertise themselves in the same manner as tradesmen; but it is rather surprising to find a respectable publishing firm not knowing any better than that at this time of day.

THE SALFORD ROYAL HOSPITAL COMPETITION.

A COMPETITION for extension of the Salford Royal Hospital has just been concluded; the drawings have been on view this week.

The existing hospital is an L-shaped building with elevations to three streets, a frontage of 116 ft., and a depth of 212 ft. An adjoining piece of land of the same depth and a frontage of 140 ft. formed the area on which competitors had to scheme the proposed additions. Out of a large number of applicants eight were invited to compete, and Mr. Keith D. Young, F.R.I.B.A., of London, was appointed assessor. The conditions were sixteenth scale, no perspective, a sheet of detail, an increase of beds from 135 to 200, a nurses' home, out-patients' department, new laundries, a mortuary, and a post-mortem room.

The task of working in the new work with the existing buildings appears to have been an extremely difficult one; there can be no doubt that it has been most successfully solved by Mr. John Ely, whose design has been awarded the first premium. Both he and all the competitors have placed the nurses' block to the front in prolongation of the existing building, but he has left an interval of 21 ft. between the two blocks, in which he proposes to place a winter garden on the ground floor and a bridge on the attic level. The old and the new blocks are of the same height, but, as in the new one an additional floor or mezzanine is worked in, the break makes the contrast between the two elevations less striking. The new one will when erected harmonise with the old work, and the general architectural effect is no doubt the best in the room. The elevations are, moreover, inexpensive, and will be carried out in brick and stone, as in the present building.

The plan, however, has decided the competition. Excepting one alternative scheme, it is the only one in which the wards are placed parallel with the front street. Where the two sites meet a corridor runs back from the front, with the wards right and left, with 48 ft. open space between them. Halfway along this corridor a second corridor branches off to the left to the centre of the long arm of the L formed by the existing buildings. This second corridor is shown by all competitors, and appears to come naturally out of the disposition of the old buildings. There are three new blocks parallel to the front street—first, the nurses' block, four floors in height, the three upper ones each with twenty bedrooms and the ground floor with the day-rooms; then a ward block in the centre, with thirteen beds, two floors in height, extending to the right of the central corridor; and then a third block forming wards both right and left of the central corridor, on two floors, with sixteen and seventeen beds in each ward. This disposition of the wards will be found very convenient in practice, especially by the medical men who have to frequent them. The strongest point of the plan, which differentiates it from all the others, is the grouping of the rooms attached to the out-patients' waiting-room. There are three consulting-rooms, each with two dressing-rooms, all top lighted, and they are so arranged that the patients reach them on one side and the medical men by a private corridor on the other. In all the other plans the medical men have to pass through the waiting-room to reach the consulting-rooms, in full view of all those waiting. In the successful plan those waiting do not see the medical men at all until they enter the consulting-room. The way out from the consulting-rooms to the dispensary and to the street is also well thought out—better than in any of the other designs. A small separation-ward is shown, which may be found very useful.

The one blemish which suggests itself is the central corridor of the nurses' block, which is lighted by fanlights over the doors and is without direct light. By omitting some of the bedrooms on each floor and adding those omitted at the back direct light and ventilation could be obtained.

The second premiated plan forms a remarkable contrast to the first; there is so much open space that it would appear as if less accommodation were provided. It is the only plan with circular wards, 40 ft. diameter, with twelve beds each, on two floors, to which it no doubt owes its position. The out-patients' department is distinctly faulty when compared with the one just described.

The third premiated plan differs, again, radically from those mentioned above; the wards are oblong, and are placed at right angles to those of the first premiated design. The corridors of the nurses' block are well lighted, and show the correct way of treating this important section of the building with windows giving direct light where it is required. There appears to be an oversight in the levels of the ground floor. The new wards are on the same level as the present ground floor, from which several steps rise to the level of the ground floor of the new nurses' block; but this block is shown level with the new wards, and is really several feet above them.

The design marked "A" is somewhat similar in grouping to the third premiated plan. A central corridor extends across the site parallel to the front, from which two ward blocks extend backwards parallel to the side street, with the nurses' block in the front. No attempt has been made to light the central corridor in this block, which is 136 ft. long, with light only across two staircases. Nothing more faulty in planning could be suggested; it arises entirely from want of study, and should bar success in all cases. The consultation-rooms are also faultily arranged, as already described. A good feature is that all the floors of both the new and the old building are on the same level. The new elevation abuts on the old one without a break, and, as within the same height an additional floor is obtained, the two would not harmonise; it is therefore a relief to find that this design will not be carried out, as the result from an art point of view would be disastrous.

The design marked "B" is broadly similar to the one just mentioned. The same objection applies to the elevation, which is, however, more carefully thought out and drawn.

"G" has submitted a very clever plan and an admirable elevation, with the best sheet of detail in the room. He has made some bold alterations in the existing buildings. The board-room is removed, and is made the central feature of the combined new façade. The design must have made a bold bid for a premium, and it is a pity it should have missed one. The new buildings do not occupy the whole of the new frontage; a cartway from front to back gives access to the inner court spaces; on the right of it are the one-story laundry and mortuary, and on the left the hospital buildings. The floors of the old and the new buildings are on the same level throughout, consequently the elevation is the most pleasing of all submitted. Unfortunately, the gables of the new portion differ from the more classical outline of the wings of the existing buildings. This has been necessary to provide rooms in the roof. The interference with the existing building would no doubt cause inconvenience, and that may be the point which turned the scale against this design, which has had more thought bestowed on the working out than most of the others.

"H" has sent in fifteen sheets of drawings, against ten submitted by Mr. Ely. He has sent alternative groupings of the wards,

one at right angles to the front and one parallel to it. The arrangement of the corridors is very similar to that of the first premiated plan, but the wards are on four floors, which would cause needless inconvenience. Not the slightest attempt has been made to harmonise the new front elevation with the old; the height is greater, the sill levels are not the same, and the general feeling differs entirely. When adding new work to old the elevations should be as carefully studied as the plans, but several competitors have completely scamped this section of their work.

THE ROYAL INSTITUTE OF BRITISH ARCHITECTS.

THE usual fortnightly meeting of the Royal Institute of British Architects was held at 9, Conduit-street, on Monday, Mr. Leonard Stokes, Vice-President, in the chair.

Deceased Members.

Mr. Alex. Graham, Hon. Secretary, said that since the last meeting he regretted to say they had lost four of their members—Sidney Fowler, elected an Associate in 1883; Wm. Angelo Waddington, elected an Associate in 1882, and a Fellow in 1903; William Alfred Large, Fellow, elected in 1904, who was the District Surveyor of the Belgravia District, St. George's, Hanover-square. The fourth name was one very familiar to every member of the Institute, and the deceased was the son of their respected Fellow, Mr. T. H. Watson. Mr. Watson, he was sorry to say, lost his only son the other day after only a short illness. Their sympathies were, he knew, with every active member of the Institute who lost a friend, and their sympathies would go out especially to Mr. and Mrs. Watson for the great loss they had sustained by the decease of their only son. Arthur Maryon Watson was a young man of great promise. From the time he joined the Institute he took an active part in its work. He was one of the Hon. Secretaries of the Library Standing Committee, and was, until recently, the Hon. Secretary of the Architectural Association. It was very sad to record the departure from their ranks of any young man whose career was one of promise and one who, he was quite sure, as a man of education, would have been of great assistance to them in their operations. He therefore thought that in their letter of condolence to Mr. and Mrs. Watson they should express themselves much on the lines he had mentioned—that they regretted the departure from their ranks of one who would, in all probability, have been not only of great service to the Institute, but would also have had a very creditable career. He moved formally that such a letter of condolence be sent to Mr. and Mrs. Watson, and he was sure he had the sincere approval of every member of the Institute.

The motion was agreed to in silence.

Modern Church Design.

Papers were then read by Sir Charles Nicholson and Mr. H. C. Corlette, on "Modern Church Design," the following being abstracts:—

"Sir Charles Nicholson, in opening, acknowledged our indebtedness to recent writers and lecturers on modern church building. Just as Pugin and Beresford Hope in the middle of the last century were instrumental in killing the Gothic style of the Peel churches, so later critics have put an end to the fashion of imitating the eccentricities of men like Butterfield or Burges in buildings which lack the grace and sense of proportion which give distinction to the works of those masters.

Touching the smaller and simpler types of churches, the factor which the architect should bear in mind when designing such buildings is the necessity for restraint and simplicity. Generally the builder of a small church is only justified in aiming at that kind of dignity which can be attained by simple outlines and good proportions. Delicate ornament and bright colours are not out of place in such buildings; but an undue multiplication of parts, an excessive parsimony of material, or the use of meretricious ornament can only result in disappointment. A refined sense of proportion or detail cannot be equally attained by all; but we can at any rate build simply and without offence, and refrain from aping the features of a cathedral upon the scale of a chapel.

The importance of a simple plan cannot be overestimated in our smaller churches, and in such buildings it is not always necessary or desirable to sacrifice too much for symmetry. Thus, under certain conditions, good results can be obtained by planning a moderate-sized church with a nave flanked by an aisle of fair width on one side only. Promoters of church-building schemes are apt to make a fetish of an unobstructed area full of pews in front of the chancel and altar. There is no real necessity to place the altar and chancel in full view of all the worshippers, especially when everybody possesses a Prayer-Book and can read it. The question of placing the pulpit in a conspicuous position, and of making the preacher audible to the congregation, can generally be solved in a church divided up into spans of reasonable width, and carried upon fairly light arcades, especially if the Continental and Old English plan be adopted of placing the pulpit about a third of the way down the nave, so arranging the seats that those placed east of the pulpit should be capable of being turned round during the sermon.

Although the passage-aisle type of church is capable of producing imposing architectural effects, these are only possible where the height is ample; the plan is therefore a costly one, and unless ample funds are available it is better to adhere to a more economical type of design. An effect of internal spaciousness can be best attained by dividing up a church into two or three spans of fair width and height, rather than by exaggerating the dimensions of the central avenue and tacking on a pair of aisles like cottage sculleries.

Speaking of the value to the architect of a true sense of scale, the author referred to the many Renaissance buildings, like St. Peter's at Rome and the Isaac Church at Petersburg, which suffer from the exaggeration of their details. Our own besetting sin is in the reverse direction, and we are apt to destroy the dignity of a whole by composing it of a collection of features so small as to be mean in themselves. The work of men like Street and Butterfield is generally marked by a fine sense of scale in the individual parts. Some of the best effects in modern church work have been produced in simple buildings by the use of thick walls, ranges of large windows, full arcades, and plain roof lines.

A problem often presented to modern architects is the production of cheap town churches of good size, seating up to 1,000 people or so. By exercising great care and economy it is still possible to build substantial churches fairly cheaply; but in such buildings it is only possible to attain simple effects which do not commend themselves to public taste, and it is only by the exercise of some diplomacy that an architect compelled to build cheaply is excused from the obligation to disfigure his work with poor ornament. Under these conditions it is advisable to aim at actual bulk rather than at architectural refinements or luxuries; and such unessential features as chancel arches, clearstories, broken-up roofs, and an undue multiplication of parts should be dispensed with.

The one quality which cannot be dispensed with in these plain churches is that of sufficient solidity. In cheap modern churches, when the construction is starved until the verge of stability has been nearly attained, one cannot but feel a most painful sense of pretension and inappropriateness. If we have to build cheaply, let us, at any rate, build solidly, and not waste money upon moulded dressings of Bath stone or even baser materials.

As regards external design we should be content with the simplest possible outlines and with the severest of detail. One source of dignity is within the reach of every church builder, viz., a long, unbroken roof line. It is hardly possible to overestimate the value of this; but it requires a certain amount of courage in the architect to compass the building of such a roof. What is true of a roof line applies also to a parapet, whether plain, pierced, embattled, or pinnacled.

The author referred to the mistake, so often made by church-building committees, of underestimating the possible requirements of their localities. Instead of laying-out a sufficiently large scheme at the outset, they aim at getting a church finished quickly to hold 600 or 700 people, trusting to supply future needs by the erection of mission or district churches as the population grows. This is a great mistake. The organisation of a single large church is generally more efficient and less costly than that of a number of smaller ones. In a large town church, well equipped and well staffed, it is possible to maintain a constant succession of services with the same expenditure of labour that is now dissipated in the simultaneous performance of services in half a dozen small churches. Architecturally it is evident that one good building is worth any number of indifferent ones. It is bad economy that some dozen churches within a radius of a mile should have exactly the same service going on in them at eleven o'clock every Sunday morning; the clergy are overworked and underpaid, sermons are only half-prepared, churches are half-empty, and church music is often of a vulgar and sensational character. The author thought this condition of things might be remedied by imitating the generous ideas prevailing in some of the Continental towns, where modern churches are built, cross-planned and vaulted throughout, varying from 180 ft. to 200 ft. in length, and from 60 ft. to 80 ft. in internal height.

As regards the style of our churches, the author referred to the fashion of deriding modern Gothic. Our Gothic school, he said, is by no means seeking merely to reproduce the effects which it was only possible to obtain under conditions which no longer exist. Perhaps it is because the conditions under which later Gothic work was done more nearly approximate to those of our own time than the conditions which obtained during and before the XIIIth century that the most successful of modern Gothic work is based upon late rather than upon early examples. But it will be conceded that the type of work which has been developed from late Gothic models has grown up into a fairly well-understood manner of architectural expression, which is both modern and English and church-like. This being so, asked the author, is it worth while to cull Byzantine or Classic details for the sake of mere novelty, or to imitate or invent features which are merely picturesque, quaint, or even grotesque? Surely it is wiser to recollect that fashions which are merely odd are bound to change rapidly, and to devote our superfluous energy to the perfecting of planning and the development of construction. The secret of Bentley's success at Westminster lies in its solution of such problems as the construction of a fireproof-roof system, and the possibilities of vaulting a large building in concrete, and not in the clever compromises between Classic and Byzantine detail with which his work is adorned. And the wholesomest fruit of the Gothic revival is to be found in the series of vaults which Pearson poised with consummate skill over many of his churches, rather than in the miles of correct XIIIth century Lincolnshire mouldings with which he covered his cathedral at Truro. Under the influence of the Church of England the Gothic style can scarcely be said to have been entirely disused at any period in this country.

The spirit of the Church is distinctly conservative and traditional, and, in a sense, still mediæval; and it is not unnatural that our church architecture should reflect this tendency. Moreover, churches like St. Michael's at Coventry and St. Nicholas' at King's Lynn, and scores of others, form models for town churches which would fulfil every requirement of the present day; for they are the best compromise that has yet been evolved between the conflicting requirements of ample accommodation, good accoustics, practical comfort, and architectural dignity.

Mr. Hubert C. Corlette, treating of the practical requirements of a church which should be satisfactory both ecclesiastically and architecturally, said that first the building must be suitable for the locality in which it is to rise. It should be quiet and dignified, and it can be both of these without being mean and bare, even though no mouldings, carving, or other decorations are possible. The levels of the site, the course in which the drains may fall, the nature of the subsoil, and the foundation with which it will be necessary to deal are elementary

matters which cannot be overlooked. But if the work is to be part of the locality in which it is to be built, the characteristic type of work which has been the pride of the neighbourhood for centuries, the local materials available, and the capacities of local craftsmen should be considered as well. To use the bricks, tiles, or slates, the stones, the sand, or any other materials which are parts of the surrounding hills and valleys, is but to make the work a distinct portion of the soil upon which it is to stand. The local types should also be studied so as to get a distinct idea of the way in which one may best work in touch with tradition.

Dealing with the question of accommodation, the author subdivided his subject into (1) the sanctuary: *a*, altar; *b*, reredos; *c*, steps; *d*, altar-rails; *e*, sedilia; *f*, piscina and credence; *g*, altar and sanctuary lights; (2) the choir: *a*, reading-desk; *b*, choir seats; *c*, lectern; *d*, steps; *e*, screens; *f*, organ; (3) the nave: *a*, seating; *b*, aisles or passages; *c*, porches; *d*, narthex; *e*, font; *f*, pulpit; *g*, litany desk; *h*, floor levels; (4) the side chapel; (5) the vestries, sacristy, cleaner's-room; (6) lighting, heating, ventilation, drainage, roofs, musical considerations.

Experience has shown that the *mensa*, or slab, the table-top, which is the altar itself, apart from its supports, should not be less than 7 ft. by 1 ft. 8 in. But 8 ft. is better as a minimum length; and the top of the altar-stone should not be less than 3 ft. 3 in., nor more than 3 ft. 6 in., high above the foot-pace or platform upon which it stands. The altar should be so placed in the sanctuary that the length of it is north and south, with the long sides towards the east and west. The altar need not be so placed as to be in full view of the whole congregation. But it is not desirable that it should be altogether hidden and screened, as seeming to exclude the worshippers who are present to take part in the service of the church. The altar should be raised above the level of the nave floor. In a long and generally large church it may with advantage be higher than in a small and short one. There should be one step, and one only, at the entrance to the sanctuary from the choir.

The reredos gives opportunity for the use of some of the highest forms of artistic expression in colour or form. In it the architect, painter, and sculptor, the carver and worker in metals, may use all their best faculties and ideals in producing a work of admirable architectural beauty. In its simpler forms, the dorsal or hanging with side curtains may be used.

If there is unlimited room, and a really fine sanctuary may be had, let it be large. Then the altar and platform may be well detached from the east wall, and stand forward into the sanctuary with advantage. There may be the steps close to the platform, returned round it, with a wide space between the lowest of these and one or two carried across the entire sanctuary. On the other hand, if the site is in a town, it may be confined, and a limit placed upon the space available for a sanctuary. If this is so, everything should be done that is possible to make the sanctuary worthy of the object for which it is used. But it must be convenient, useful first, and dignified. All actually unnecessary steps should be discarded.

The true place for any distinction between one division of the church and another is at the entrance to the sanctuary, not at the entrance to the choir. If anything in the nature of a chancel arch is used, let it be placed above the entrance to the sanctuary. The screen might then be placed there on a step above the choir floor, and the altar-rail at a convenient distance 5 ft. or 6 ft. eastward of this. This would be a suitable position for the rood screen in a modern church with a choir of laity.

The custom of placing the lay singers in the choir between the nave and the sanctuary is an innovation. But as it has so largely been accepted, architects must deal with it as well as they can; and one thing necessary will be to arrange that the benches and desks for the choristers shall not be too obtrusive. The long lines of them are valuable architecturally to lead the eye on to the altar. But it is well that they should not appear as a too prominent break between the nave and the sanctuary. The best way to avoid this is to keep them lower than they are sometimes designed.

If the choir is to be raised at all above the nave floor level, it will undoubtedly be best that all the steps should be collected together at the entrance to the choir from the central passage of the nave. It is not, however, necessary that the choir should be raised. But when it is lifted up, from one to three steps of 6-in. rise and 12-in. tread will be quite sufficient.

Discussing musical requirements, the author advised that the organ should not be enclosed within a brick or stone box of building materials, even though one might make it an excuse for introducing a tower. The organ is in the church for practical reasons, and should be placed so that it can be used. It should also bear a distinct relation to the size of the building, and not be too large for the church in which it is placed.

As regards seating there are well-defined and generally accepted rules which need not be departed from. In setting out the area for seating the simplest method is to allow 3 ft. from back to back either of benches or chairs. The author favoured chairs as the best solution of the difficulty of disposal of hats. If the back legs of the chairs are well planned a convenient place for hats is to be found between each chair. The hats can be shelved upon the bottom rungs of the two chairs, or upon a flat piece of board screwed to the rungs to receive them.

In even a small church the central passage of the nave ought to be no less than 4 ft. wide; it is better to be at least 5 ft. or 6 ft. Side passages should not be less than 3 ft. in width, however small the church may be. If these side passages are in aisles in which there is seating other than that properly in the nave, it will be necessary to make them 4 ft. wide. The cross passage between the seating in the nave and the western limit of the choir may be 4 ft. across, if it is not likely to be used extensively. But if the choristers approach the entrance to the choir from the vestry by this passage it should not be less than 5 ft. or 6 ft. wide. The cross passage at the west end of the church should be regarded more as a narthex, or internal western porch, than otherwise. And it might be screened from the nave, even though only by curtains above the backs of the last rows of seats.

If ample space is allowed at the west end there will be room not only for ingress and egress, and the placing of the font as an important essential of the plan, but would also, perhaps, make it possible to provide some convenient receptacle where umbrellas, sticks, and superfluous coats, wet or dry, might be deposited.

In allowing for the pulpit in the plan the first requisite is that it shall be so placed that the speaker may be heard well in any part of the building. It is, in England, usually found on the north side, not far from the entrance to the choir. But in a large church it might, with advantage, be somewhere near the centre of the nave, on the north or south side, close to the wall or arcade of the church. It will be sufficient if the floor of the pulpit be raised no more than 3 ft. above the nave level in a church of moderate dimensions. But it may often, with advantage, be higher than this, especially if it is to be used for speaking to a large congregation. In this case a sounding-board above the pulpit is an advantage. The steps up to the pulpit are better hidden behind it than shown too much. And in no case ought they to be awkwardly arranged with any twists.

In nearly all well-equipped churches it is considered necessary to provide a small side chapel. It is used principally for the small congregations which attend the week-day services, and need not be a distinct portion of the building, but be separated by a screen from the body of the church.

Generally, two vestries will suffice—one for the clergy and one for the choristers. They should be close together. And it is often convenient if the two may be thrown into one for the accommodation of any meeting or classes connected with the affairs of the church.

As regards the heating and ventilating of churches, each building will need special consideration; but the architect designer of the whole work must control the installation and arrange for it, otherwise the architecture must suffer.

The author entered into the question of the cost of building churches, and showed that cheap churches are possible provided simplicity in design is followed.

Having considered the more practical matters of church building, the author recurred to a suggestion he had made earlier in his paper, that the various forms and furniture, and the disposition of the main parts found in use in a modern church, are not arbitrary customs or conventions. "These forms, ceremonies, and rites are all vital things. They have a meaning, a reason, for their being, and a history. They are formalities only when in the use of hypocrites, and they are neither based upon dead traditions nor the inventions of any real or supposed mediæval empiricism. At the same time, though they do not owe their continued existence and use to a conservatism which will not advance, we must not allow them to be lost through any desire for progress which is neither reformation nor restoration, but rather revolution. There are, then, evidently guiding principles in church planning and arrangement as there are sound principles in building which we must remember." The author went on to recapitulate the principles underlying the traditional methods of church planning, briefly outlining the practice in England since early Christian times.

Concluding, he said that it was too much assumed that nothing would be suitable as a design for church work in England now unless it had the sanction of English tradition manifest in its every feature and detail. Had not, however, certain types of design been made English by use? Had not some of the now essential elements of English design first been imported and then by the work of some generations of designers made ours by numberless experiments in the course of centuries? It appeared to be thought that it was "incorrect" to mingle Eastern with Western ideas of construction as a foundation of architectural design. But the mediæval builders were hampered by no such absurd respect. In the South of France and in Spain the designers, though revelling in the same magnificence that height gave them, enclosed their whole floor area with one enormous vault. The grandeur of one large open space appealed to them in the clearer southern light as the broken mysteries of numberless supports satisfied in other ways a northern imagination. Because the domical experiment was not tried in England before the close of the XVth century, are we to be for ever debarred from using it in a design coupled with more ordinarily Gothic principles of structure? For nearly two centuries the round arch, and no tracery, was essentially, if inevitably, a strong and beautiful element of our English Gothic art.

Mr. G. H. Fellowes Prynne, in proposing a vote of thanks to the readers of the papers, said that he had not seen the papers before entering the room, and it was rather hard to follow them in detail. He must say that one was so heartily in sympathy with the whole tone of thought of the papers that one had little to say in the way of criticism. Sir Charles Nicholson mentioned first his difficulties in reference to the clergy. There was no doubt that church architects had that difficulty, and he believed that the clergy would be the first to acknowledge it. In the forties, and certainly in 1849 and 1850, there was at Oxford and Cambridge a very great wish on the part of the clergy and students to really enter into the study of architecture, and especially Gothic architecture. Of course, this interest came when the Gothic revival was at its commencement, with all the fire and enthusiasm of the early Gothicists, of whom now it was rather the fashion to speak slightingly, but whose influence had been felt by everyone in the architectural profession. He believed that they owed an immense debt of gratitude to those pioneers of a wonderful work of reformation, and yet at the present time one heard abuse of them because they did not follow definitely on the lines which were at present thought right. They at present were building on what those men taught them, and by bringing them back to appreciate the good work of the past, and although now they

might not build on the strict lines of style and bind themselves to follow such narrow lines as they did, yet in passing he must say they owed an immense debt of gratitude to those who first started the Gothic revival. It was really a great treat to meet some of the older men of the last generation and to find with what deep and earnest enthusiasm they entered into church architecture. It was so utterly different now, for amongst the younger clergymen of the present day there was an absolute ignorance in anything to do with church architecture from the ecclesiastical point of view. There were, of course, knowledge and small matters of ritual and detail, but in studying these they seemed to have lost sight of the great principles of Gothic art, and not only of Gothic art, but of church architecture. They appreciated a church which was rightly arranged for them, but not from the sense of any knowledge that it was right because of any past history of the church. In that matter, however, there were signs of improvement, and probably Sir Charles Nicholson and Mr. Corlette, with their large experience of church building, would have noticed that there was an increasing interest gradually growing up amongst the clergy, and the more that was fostered the better it would be for their church architecture. As any church architect knew, they had extraordinary difficulties to deal with, for they had not only the clergy to deal with. He remembered paying his first visit to Yorkshire and describing to the Church Building Committee the plans, and one of them said: "I want to know, is there any collusion between Mr. Prynne and the builder?" He did not quite know how to answer him, but at last he said he thought the proper thing would be to have pistols and coffee and settle the matter outside. That Yorkshireman was now one of his best friends. They often found such committees consisting of men who had absolutely no knowledge of building; perhaps those who had some knowledge of building were often the greatest nuisance, and seemed to be there for the mere purpose of obstruction. If clergy could only really grasp the fact that the smaller the committee the more quickly they could get to their work, it would be better for church building generally, and he spoke from a somewhat large experience. Then there were difficulties with faculties, and who did not know the difficulties of the Chancellors? They were so mixed in their opinions, their courts were so unstable in the giving of decisions. In Cornwall he was asked to design rood screens in almost every church, but in some other places he was not allowed to put them up. In one church he was asked to take the rood down and put a screen round the chapel. The inconsistency and smallness of all these things was most irritating to any man who had any artistic feeling. They had magnificent examples in their old churches of what modern churches could be, several of which had been mentioned in the papers. One of the points raised was the cost, and, as they knew, they were asked to design churches at 6*l*., 8*l*., and 10*l*. a sitting, and if they were to take it on that miserable ground he candidly said they could not properly build a church under 12*l*. a sitting. People seemed to think they were doing something clever in pinning architects down to a very small price, but he invariably found that afterwards they were sorry for it. He would like to emphasise very strongly the point that they should aim as much as possible at height in their churches. Much as one admired the beauty and great simplicity of many of their country churches, yet one went abroad and found in Belgium, Italy, and the southern part of France numerous country churches which elevated one by their splendid height and beautiful proportions. Mr. Corlette had given a summary of the main points of how they should plan a church, but there were one or two remarks he might say in criticism. He thought the position of the screen was almost dictated to them by precedent. Most of their churches marked definitely the line of division between the nave and altar at the chancel gates, and therefore that was the appropriate place for the screen. He saw Mr. Corlette's line of argument, but they had to accept the facts as they were, and he thought it would seem rather curious to see the screen in the position of the sanctuary steps. With reference to the seven lamps, Mr. Corlette mentioned the symbolism of the seven candlesticks; he (the speaker) thought the seven lamps symbolised the seven Spirits before the Throne in Revelations. The sittings were a matter of detail, and also the choir, but he thought it essential that choir seats should be 21 in. instead of 20 in., as they had their surplices and so on. As regarded the rood, he could not see that anything added so much to the furniture and detail and beauty of a church as the addition of that simple and most Christian rood. Coming up by train from Exmouth some time ago, a fellow-traveller said: "That church over there has what the High Church party call a rood. What is a rood?" And his companion replied: "I suppose it is in reference to the sacred acre."

Mr. H. H. Statham, in seconding the vote of thanks, said that in reference to one point in Sir Charles Nicholson's paper he was very much impressed with the idea that their town churches were too small. He liked, as Mr. Beresford Hope once said, "pure, unadulterated bigness," and it was one merit in Pugin that, although he did not get larger areas than other people got, he did have a passion for height. He remembered going into what looked outside quite a small church of Pugin's, in Leeds, but when he got inside it looked twice the height one expected. Of course, Pugin sacrificed almost everything for that, but he did produce an effect. He would like to add also that he very much liked the wide narthexes which they found in the Wren churches in London, which gave one a sort of sense of preparation before going into the body of the church. He was afraid that Mr. Prynne would consider him to be an utter barbarian, but on the general principles of church planning he had long had the feeling that mediæval planning—the long plan—was not the plan for the modern church, and he did not quite sympathise with the idea that they were to take the protection of the altar as the main point. He thought that the main point in a church was not to shelter the congregation, but to uplift their souls; the building they went into should be such as to impress them with a feeling which would take them away from the common associations of building, and which would have a poetic and uplifting effect. If they considered that the congregation was a far more important element in modern worship than in mediæval worship, he could not help thinking that the true plan for the modern church was the wide central area. That was a very old idea with him. When he was still a pupil he evolved a plan of what he called a XXth century church. His only excuse for mentioning it now was that he sent it to Dean Stanley for his opinion. His plan was a Greek cross with very shallow arms, with a dome over the centre, with an apse at the eastern arm and the communion-table on the chord of the apse. He supposed that would seem very shocking to many people, but Dean Stanley agreed with it and said that it was in accordance with the earliest Christian tradition—he underlined the word "earliest." Would it not be worth thinking of whether they should not go back to the earliest Christian tradition? That idea did away with the long chancel and the choir. Did they want a long chancel now for any reason except to put their choir in? If so, he said that it was of no use. If they were to regard the choir either as persons who were to sing the anthem, or as singers to lead the congregation, they could not put them in a worse position than in a long chancel with their sides to the congregation and separated from them by such a great distance. Now there was a committee many years ago which, he thought, was held under the auspices of the Institute. It was a committee of architects and organists to settle where was the best position to put the choir and organ, and they came unanimously to the conclusion that the choir should be half-way down the nave on each side and the organ should be at the west end of the church. There was not the slightest doubt that was the best position for the organ, musically speaking, and the feeling was that the choir should be more in the middle of the congregation. If anyone wanted to know how that practically worked he could find it at Lincoln's Inn Chapel at any time during the legal terms. He wished to say a word on a passage in Mr. Corlette's paper which was omitted in reading for want of time, and he was going to be a little musical. He was for thirty years an amateur church organist, and he thought he knew all about church organs there was to know. Mr. Corlette made a suggestion about the size of organs, and said the organ was to be regulated by the size of the church, and he had seen frequent complaints of organs being too large. Now it did not depend upon the size of the church, but on what they were going to do with the organ, and that depended on whether they had congregational singing or not. If they limited the singing to the choir the people would not be content, and he thought that one of the finest things in worship was the singing of a grand chorale by the whole congregation. But they sung in unison, and the harmony of the choir was entirely drowned. They had the barbarous effect of a tune shouted out in unison in the middle of the church with no harmony. It was to meet that that they wanted a large organ—not a concert organ—but a large organ with a heavy pedal. They scarcely ever found it in an English church, but if they went into German churches they found an ordinary church organ had seven, eight, or ten stops on the pedal, and that was what made the bass and was the reason why a good large organ was wanted in a church, unless they meant to shut the mouths of the congregation.* He wished to put that on record, because he had seen complaints of the exaggerated size of organs by architects, and he really did not think they quite understood the musical reason for having it. If they had a congregation singing in unison they must have something to furnish the harmony and the bass to it.

Mr. Maurice B. Adams said there were one or two little details which he was rather surprised Mr. Corlette did not allude to, because he found they were very carefully provided for in the admirable design of the church at Epsom which was in the room, and which very frequently were overlooked in the building of modern churches. One of these points was the necessity of a return way for communicants. Nowadays it was happily the custom for a very large number of persons to assemble and communicate at the early services and on festival occasions, as he knew very well. Where there was only one entrance to the chancel it was extremely difficult to regulate the traffic to and fro with any degree of decorum. In fact, at some fashionable watering-places, such as Folkestone, it was most unseemly to see the number of people having to squeeze through the chancel gates and squeeze back again in the face of a large number of persons anxious to approach the altar. Now, if they looked at the plan of Sir Charles Nicholson and Mr. Corlette for the church at Epsom they would see that this was very carefully provided for, and in his opinion it always should be provided for. Then, again, with regard to the position of the altar in juxtaposition with the reredos they could hardly imagine anything more unseemly than to go into a church, either Roman Catholic or Anglican, and see the sacristan standing on the altar adjusting the candles and other ornaments at the back of the altar. Now if there was a small space it would be a good thing. In some churches a staircase was arranged at the eastern side of the reredos, so that the sacristan could get up and adjust the ornaments and everything on the reredos without profaning the altar. It was a very small detail, but it was one which occurred to him as very essential, and in very few churches was it provided. With regard to what Mr. Statham had said, and he appreciated his remarks, of course it all depended on how they looked at the church. If it was a church where they had what was called hearty congregational worship then no doubt a big organ at the west end and what he might call a square auditorium, where everyone saw the pulpit, was most desirable, but most church people would rather appreciate the view enunciated by Mr. Corlette with regard to the general arrangements of the church. He had noticed of late that in some of what were called the

* It is these large pedal pipes, which, being an octave lower than the manual pipes, are therefore double the length, which make a great deal of space occupied by the organ; but they are absolutely necessary for the effect of an organ to accompany congregational singing.—H. H. S.

more advanced churches there was a tendency to do away with the choir round about the sanctuary, and they got the choir at the west end. In St. Michael's, Brighton, they had a most remarkable church. The original church was built by Mr. Bodley, and an enormous church had been built on to it, and in the church at high celebration the choir left the sanctuary altogether and passed to the western gallery. They went up a staircase and the services were conducted from there. He could not quite appreciate it himself, but no doubt it had advantages. One thing about the narthex had not been mentioned, which was the desirability of making it at a higher level than the general body of the church. If they went to St. Martin's, Brighton, and to the fishermen's church at the back of St. Paul's, where Mr. Carpenter had placed several steps, they would find the effect was very fine indeed. At St. Martin's, and in some of the old churches, they found that the western portion was raised, and when they went into the church they got a very fine view of it, and it had also an advantage from the modern churchwarden's point of view, because when anyone came strolling into the church he was in full view of the congregation, and the churchwardens could at once see if a stranger required a seat. He hoped that those papers would be illustrated by plans in the *Journal*, because the references which had been made would be very much heightened if they could have a few diagram plans showing the complete arrangements to which reference was made.

Mr. E. P. Warren said it appeared to him that Sir Charles Nicholson was somewhat dilatory in holding a brief for Gothic architecture, but probably his expression was due to the lateness of his arrival. For himself he would personally endorse and uphold the view that in the essentials Gothic architecture and its adaptability to circumstances was such that it could invariably meet any reasonable requirements whatsoever. He thought that church planning as a problem did not produce any differences of planning from any other building. They had to deal with a certain site and with a building for a certain purpose, and composed of a definite material, and in this it was akin to any other building, and any architect worth his salt would plan his buildings for the requirements. It required common sense, but, more than with other buildings, it required uncommon sense. It required the cultivated sense of dignified proportion and of imposing effect which might be apparently derived from native intuition, but must, he believed, be largely the result of careful observation and study. One point he would like to notice was in regard to the advantage of the admirable plan which had been used by some modern architects—the passage aisles. Aisles with pierced archways through the buttresses afforded one of the most dignified and one of the most utilitarian plans for a modern church that could be devised, and were to be seen at All Souls', Clifton-street, and St. Augustine's, Pendlebury. He had seen the same plan adopted in Spain and Germany, and in a church at Ghent. There were many ancient instances of it, and he had no doubt the ancient use of it arose from the desire to get the great nave space which could be got in that way. Many mediæval churches were built on that plan of a universely wide nave with no aisles whatsoever. Mr. Corlette was a little didactic in regard to some of his rules for dimensions, and he did not agree that the reredos should be somewhat wider than the altar. The reredos in a small church should be an appropriate part of the furnishing of the altar, and he did not see why in modern use it should not be precisely the length of the altar. However, reredoses had been so intensely disputed that he would not say more about them except to mention a rather good definition he heard of one, *i.e.*, that it was a thing which invariably set people's backs up. One thing he would like to say was that square east ends in English churches were probably due to the fact that in England stone vaulting was unusual. The usual form of roof in English churches was wood, and it was not so easy to cover a round apse as a square one, and the English carpenter adapted himself very much more readily to the square roof. He thought that the fact of their churches being long and low, as opposed to the much more imposing height of Continental churches, probably arose from the fact that the smaller churches copied the cathedrals. If they built very long, unless they were immensely wealthy, they could not afford to build very high, and he thought some such explanation accounted for the low type of the English roof.

The Chairman said they had had two very excellent papers, and, if he might say so, it struck him that the subject was not quite so much modern church planning as a review of ancient church planning. He agreed with Mr. Statham that a good deal might be said for the modern idea that the congregation would express a desire for being seated where they could see and hear. Mr. Prynne had harried the clergy a good deal, and he would not say anything more about them except that they were very excellent people, but there was no getting away from the fact that the clergy had views. What Sir Charles Nicholson said he thought they might take very much to heart about this endeavour to reproduce in a church really what they could only do in a cathedral. This reproduction of large features on a small scale was really a system suicidal to a lot of their work. Simplicity of their plan and simplicity of everything in the consideration of a church was desired, and they could get effect by a few simple lines rather than a redundance of parts and a confusion of features. Mr. Corlette referred to one matter he thought rather strongly about, and that was the east window. He believed that Mr. Corlette said that it was not absolutely necessary, and he thought in the next church Mr. Corlette did he might seriously consider the omission of the east window entirely. It was generally in the way, and it dazzled one's eyes unless they had the double-dyed, stained-glass window to which Sir Charles Nicholson had referred. They could not see the altar, and the altar, after all, was the one thing which ought to be seen, and therefore the east window, although a beautiful thing in itself, was only a beautiful thing out of place.

The motion was then heartily agreed to.

Sir Charles Nicholson said he would like to make one remark as to Mr. Corlette and his screens, as he did not think they quite understood Mr. Corlette. He thought he meant to have a good deep sanctuary when he had a screen. With reference to what had been said about the seven lamps, he went into a church the other day in Exeter, and he saw seven lamps twinkling away very nicely. He could not help thinking at the time that there was something wrong with them, and he was sorry to find out that they were electric lamps. As to the question of Gothic, it all depended on what they meant by Gothic. Then as to passage aisles, of course, they could make a very nice thing by passage aisles, but he thought a passage-aisle church must be a fair height to be effective. Something had been said about narthexs, and there was a very nice little church at Holmleigh St. Mary, near Dorking, which had an oak screen with gates which enabled the narthex to be left open so that people could go into it without going into the church. As regarded chancellors they all probably suffered from them, and the only thing he could suggest with chancellors was to treat them as the vulgar boy did in the poem.

Mr. H. C. Corlette said as to the east window he thoroughly agreed with the Chairman, although, perhaps, he was rather half-hearted in saying so in his paper. He thought it quite unnecessary, but, at the same time, if they omitted the east window, they wanted a very fine reredos and a good light north and south. It was the fact with the east window, especially if they had not got these double-dyed stained-glass, that one could not see the altar at all. He was much interested to hear Mr. Statham's point of view about the organs, and he should be glad to see it on record in the *Journal*. He had not read all his paper because he had a certain feeling for—should he say the congregation before him, but members would find that a great many points which were omitted in the paper, and had since been referred to, would find a place in the *Journal*. There were many points about early traditions of planning which one might begin to speak about, and he agreed with Dean Stanley's idea as to the early Christian arrangement, but adapted to modern needs. There would be a good many illustrations of plans in the *Journal*, and in that connexion he would like to thank Mr. Northover for the assistance he had given.

The Chairman announced that a business meeting would be held on March 4, when an election of members would take place, and a Report of the Council would be presented on the resolution with regard to the question of registration passed at the annual meeting on April 3, 1906. Mr. Woodward has given notice that he would bring forward two resolutions on the selection of subjects to be brought before the business meeting, and the powers of the Council to represent the general body.

EMPLOYMENT OF SURVEYORS FOR THE PREPARATION OF BILLS OF QUANTITIES.

WE have pleasure in giving further publicity to the following Memorandum issued by the Council of the Surveyors' Institution for the consideration of local authorities and public bodies, merely observing that we are in entire agreement with the views expressed in it:—

"In view of the extension of the practice of direct appointment of surveyors by public bodies in connexion with the preparation of bills of quantities and of variation accounts for works executed under their control, the council of the Institution have thought it advisable to draw up a memorandum relating to the functions of a surveyor in this connexion, and his relationship to the employer, the architect or engineer, and the contractor. In doing so they are influenced by the fact that the surveyor frequently does not come into direct contact with the public bodies employing him, and that the nature of his duties is, to the public mind, somewhat obscure.

The Surveyors' Institution is recognised as the highest authority of the profession, and the council therefore make no apology for drawing the attention of public bodies and others to the nature of the duties and responsibilities resting upon surveyors who practise in this branch of the profession, more particularly as those unfamiliar with its technicalities cannot appreciate the fiduciary nature of the position these surveyors are called upon to fill. Indeed, the employer, the architect, and the contractor are so largely dependent upon their experience, accuracy, and integrity, that it would be impossible to emphasise unduly the necessity for exercising special care and judgment in selecting a surveyor to prepare bills of quantities.

The council note with satisfaction the recognition of the fact that it is in the public interest to employ a surveyor for the services referred to above. When an architect or engineer is employed in connexion with the preparation of the design and the supervision of the work, a surveyor to prepare documents for the purpose of obtaining tenders and to deal with all questions of value, and a contractor to carry out the construction, the employer has at his command expert knowledge in the three great divisions of work thus indicated, and so obtains the best results.

When, however, the practice of inviting surveyors to tender for employment is resorted to, irresponsible persons, with little training, knowledge, or experience, may quote fees at which they would be ready to supply quantities, but which would be an altogether inadequate remuneration for the amount of detailed work involved in their accurate preparation, and for the responsibility incurred.

Bills of quantities obtained by this method are likely to be incorrect, and not infrequently result in serious differences between the parties concerned, and in consequent loss to the employer or the public. While recognising that public bodies invite tenders from surveyors with the best intention, viz., that of guarding the public purse, the council would point out that any system by which the financial return for professional work is reduced below the point at which it becomes remunerative to properly trained and qualified men must tend to lower the professional standard, and so, in the long run, prejudice the public, who unknowingly have to depend so largely on the ability and integrity of the surveyor. The loss occasioned to the public by bad or inaccurate quantities far more than counterbalances the small saving in fees resulting from the system of tender.

The council greatly deprecate the practice of inviting tenders for the preparation of quantities, which appears to them an altogether unsuitable mode of engaging professional services, and desire to point out that a similar course would not be pursued in engaging the services of a medical officer, a solicitor, or a barrister, although character and experience are no more essential in those professions than in that of a surveyor. They would recommend, therefore, that public bodies requiring the services of a

surveyor should first settle under competent advice the remuneration to be paid, and then select a person or firm from a list of suitable surveyors prepared to undertake the work. The fees which should be paid vary widely, according to the character of the work, and the council would, if desired, be willing in an honorary capacity to advise public bodies desirous of settling the proper fee to be paid for any particular work.

GEORGE LANGRIDGE, President.
ALEXANDER GODDARD, Secretary."

THE CARPENTERS' HALL LECTURES: LONDON BRIDGE.

THE first of the usual spring course of free lectures on matters connected with building arranged by the Worshipful Company of Carpenters was delivered in Carpenters' Hall, London-wall, on Thursday last week, by Mr. Chas. Welch, F.S.A., whose subject was "Old and New London Bridge." The Right Hon. Viscount Dillon, F.S.A., presided.

The lecturer, who showed a number of interesting lantern views, having quoted some evidence in regard to the first wooden bridge, said it was built soon after 993, partly destroyed by Olaf in 1008, and wholly destroyed by storm in 1091. It was then rebuilt by national contributions, largely consumed by fire in 1136, and finally rebuilt in stone in 1176. Peter of Colechurch, the founder, architect, and liberal supporter of the first stone bridge, was a priest and chaplain or curate of St. Mary Colechurch, a curious edifice which stood before the Great Fire of London at the corner of Conyhoop-lane in the Poultry, and was "built upon a vault above ground, so that men were forced to ascend into it by certain steps." This church was famous as the place where St. Thomas à Becket was baptised, and the dedication of the Bridge Chapel to him was a wise step in the interests of the bridge. Becket was adopted by the citizens as their patron saint, and on the reverse of the old city seal he is represented seated above London Bridge with a view of London and its walls below. In 1201, four years before the death of Peter of Colechurch, a letter was received by the mayor and citizens of London from King John, recommending Isenbert of Xainctes as a new architect to finish the bridge, and the King's letter also provided that the rents and profits of the houses to be built on the bridge should be devoted to its repair and maintenance. In 1212, not long after the erection of the houses on the bridge, they were swept away by a disastrous fire which threatened the destruction of the bridge itself. The bridge took thirty-three years in building, and was finished in 1214. It consisted of a stone platform, erected somewhat westward of the former wooden bridge, and was 926 ft. long and 40 ft. in width, standing about 60 ft. above the level of the water. It contained a drawbridge and nineteen broad-pointed arches, with massive piers varying from 25 ft. to 34 ft. in breadth, raised upon strong elm piles covered by thick planks bolted together. It was possible that the immense wooden sterlings attached to the piers did not form part of the original structure, but were added afterwards to keep the foundations of the piers from being undermined. The obstruction caused by these huge barriers and the large number of piers reduced the entire channel of the river from its normal breadth of 900 ft. to a total waterway of 194 ft.; but Peter of Colechurch's work had not been without defenders, even as regards these points, among architects in more recent times, for they had urged that the narrowness of the arches tended to preserve the navigation of the river above the bridge. The lecturer then described a view of the bridge taken from an engraving by John Norden about the year 1600. Between the sixth and seventh piers, counting from the southern end, an aperture allowed the passage of large high-masted vessels. The opening was crossed by a wooden bascule which was raised to admit ships or to prevent the inroad of a hostile force upon the bridge, and this drawbridge was from the first a source of great trouble, being constantly in need of repair or rebuilding, and in 1758 it was finally removed. The bridge gate, which guarded the entrance to the city from the south, stood over the first arches of the Surrey end. "The gate," Stow informed us, "with the tower thereupon, and two arches of the bridge, fell down, and no man perished by the fall thereof, in the year 1436"; and in 1471 the Bastard Falconbridge and his Kentish "mariners," as Stow termed them, assaulted the restored entrance gate and burned both it and thirteen houses on the bridge. A great fire in 1725 destroyed many houses at the Southwark end of the bridge and severely damaged the gate. It must have formed a very inconvenient approach to the city, as it was only 13 ft. wide, but after the fire the gate was reconstructed, the roadway widened to 18 ft., and two posterns added for foot passengers, this being completed in 1728, but not long afterwards, in 1766, it was demolished with the rest of the city gates. The strong tower or keep stood on the north side of the drawbridge and was known as the Great or Stone Gate. Upon its battlements the heads of traitors were at first placed, and it formed a second line of defence from invaders attacking the city from the south. Stow said that the tower was erected in 1426, but the bridge accounts show that it existed in 1392, when three shields of the arms of the King and Queen were hung over it in preparation for a royal pageant. Next year the wardens went to some little expense in ornamenting the face of the tower with effigies of King Richard II. and his Consort. The "images" were cut in freestone by Thomas Wrenk, and set within "tabernacles." Wrenk also executed three shields of the arms of the King and Queen and St. Edward, and the sculptor received 10*l.* for his work, while double that sum was awarded to the artist who coloured the statues, shields, and protecting tabernacles. In order to throw the new embellishments into strong relief a layer of white plaster was spread over the wall of the tower around the figures and coats-of-arms. In 1426 the tower adjoining the drawbridge was rebuilt. In the thirteenth year of Henry VIII. the "Grete Gate" was adorned with four new statues of SS. Peter, Paul, Michael, and George, in freestone, the figures being the work of "Mathewe Peter, Spanyarde." In April, 1577, the decayed tower and arch were taken to pieces. A pretty custom in vogue in the reign of Henry VII. and Henry VIII. was the decoration of the gates of the bridge and the bridge house with leafy boughs and garlands of flowers on Midsummer Day. Besides the statues which embellished the Stone Tower, there were two figures of saints on the bridge. On the west wall was an image of St. Thomas of Canterbury, made by Laurence Emler, and the other effigy was that of Catherine, erected in the reign of Henry VIII. by Mathewe Peter. On the removal of the Stone Tower in 1577 a new structure, consisting of a gate and a tower, was set up on its site, and it was finished in 1579. It was a beautiful building, having all its fabric above the bridge formed of timber. But the glory of the gate was quite outshone by the magnificence of Nonesuch House, the wooden palace which spanned the bridge on the city side of the chapel, and it was said to have been constructed in Holland entirely of wood and brought over in pieces, being erected on the bridge with wooden pegs only, not a single nail being used in the whole fabric. Built on the seventh and eighth arches from the Southwark end, it overhung the parapet on each side, leaving a clear passage 20 ft. wide underneath its structure in the centre. The building was crowned with carved gables, cupolas, and gilded vanes, and two sundials were placed on the top of its southern side. The date of its erection could not be fixed with certainty, and its building and decoration probably occupied many years. In 1648 and 1649 workmen were busy rebuilding the houses which had lain in ruins since the fire of 1632, and even then the gaps were not completely filled, and to that circumstance was probably owing the fact that the great fire of 1666 did not inflict much damage on the bridge thoroughfare. Singular picturesqueness and animation were lent to the old bridge by the houses which lined its thoroughfare, although they seriously interfered with the comfort, and even the safety, of passengers. The houses were first built in the reign of John, not long after the death of Peter of Colechurch in 1205, the object being to provide a reliable source of revenue for the bridge.

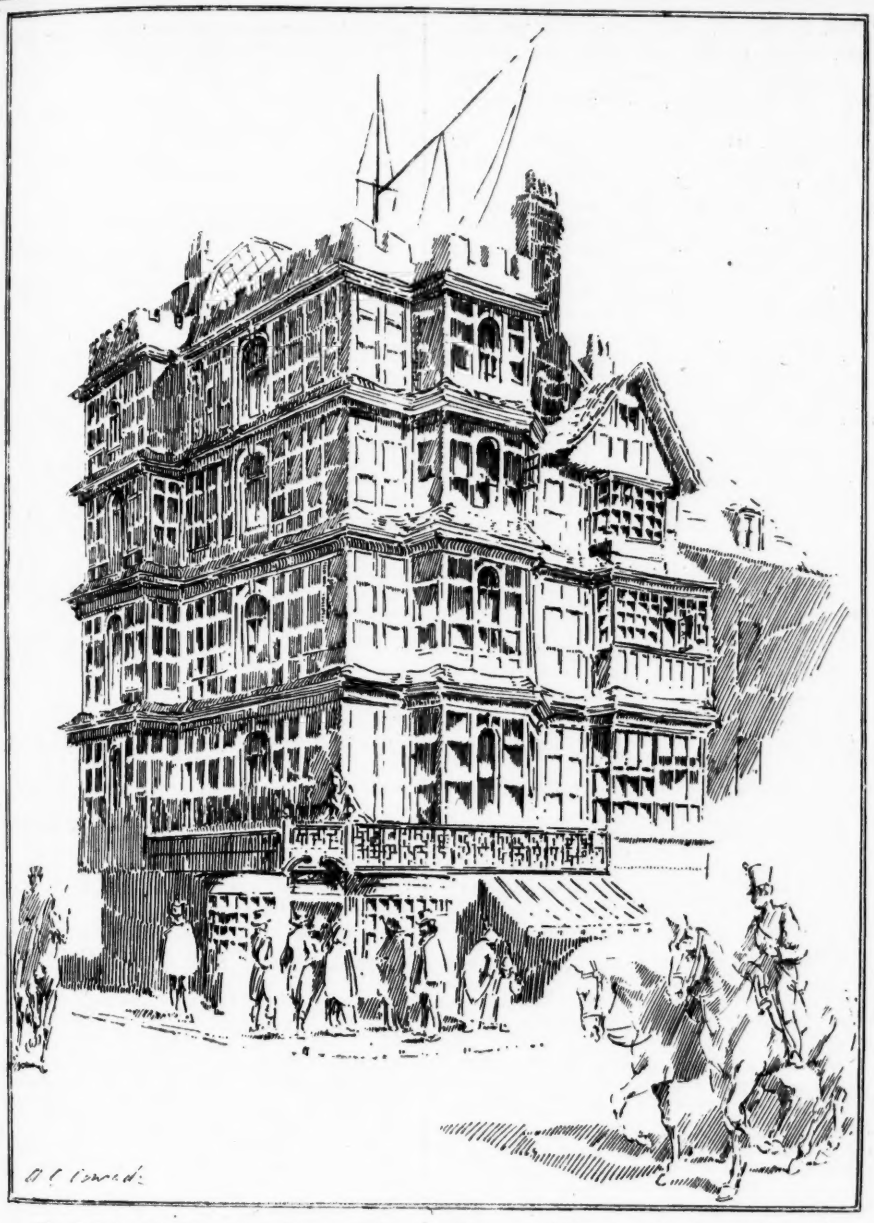
Next in interest to the bridge itself was the famous chapel dedicated to St. Thomas of Canterbury. This was erected on the tenth or centre pier, which measured 35 ft. in breadth and 115 ft. from point to point. The building was 60 ft. in length by 20 ft. broad, and stood over the parapet on the eastern side of the bridge. The western front facing the Bridge-street was 40 ft. in height, having a plain gable, surmounted by a cross, and was divided by four buttresses into three parts, the centre part containing a rich pointed arched window of one mullion, with a quatrefoil on the top, and the two sides were occupied by entrances to the chapel from the Bridge-street, each being ascended by three steps. The interior consisted of two chapels, one above the other; the upper chapel was lofty, being supported by fourteen groups of elegant clustered columns, and lighted by eight pointed windows. Below each of the windows were three arched recesses, separated by small pillars; the roof was originally formed of lofty pointed arches. The eastern end formed a semi-hexagon, having a smaller window in each of its divisions. The lower chapel, or crypt, was constructed in the bridge itself, and was entered from the upper chapel and the street, as well as at low water from the sterling surrounding the pier. It was about 20 ft. in height, with a roof supported by clustered columns, from each of which sprang seven ribs, whose intersections were bound by fillets of roses and clusters of regal and ecclesiastical masks. The chapel also contained a rich series of windows similar to, though much smaller than, those above, and the floor was paved with black and white marble. The chapel was built by Peter of Colechurch and formed part of his design for the erection of the bridge, as was shown by the extension eastwards of the chapel pier. It was the first and most beautiful of the buildings on the bridge. The edifice was broken up in 1554, and converted into a dwelling-house. The lecturer then described the Bridge House, which had two frontages, one on the river and the other at Tooley-street, then known as Barns-street, and said that it served not only as the headquarters of the workmen at the bridge, but also as an office for the wardens. A pleasant addition to the building was its garden. The history of the bridge was a narrative of repairs. Only fourscore years had passed after its completion in 1209 when the structure was so decayed through want of repairs that men were afraid to pass it; but despite its feebleness it lasted more than 650 years. After the Great Fire, considerable inquiry was made as to the possibility of increasing the breadth of the bridge, and during the XVIIIth century great doubts existed as to whether the bridge would stand. A great improvement was effected in 1758 by pulling down some small arches and making a great arch and removing the houses. Notwithstanding the expenditure of 100,000*l.* on the reconstruction of the bridge about forty years previously, in 1800 there was renewed agitation for better bridge accommodation. The lecturer then described the steps that were taken in the matter. The first pile of the new bridge, built from Rennie's designs, was driven in March, 1824, and the bridge was opened in August, 1831. The old bridge was not entirely removed until 1832, when the bones of Peter of Colechurch were found beneath the masonry of the chapel. The bridge, as we all knew, had quite recently been widened.

Votes of thanks to the lecturer, the Chairman, and the Carpenters' Company brought the proceedings to a close.

DISTRICT SURVEYORS' ASSOCIATION (INCORPORATED).

AT the annual general meeting on the 7th inst. the following were elected officers:—As President, Mr. Frederick Wallen; as Vice-President, Mr. Henry Lovegrove; as Honorary Treasurer, Mr. John Clarkson; as Honorary Secretary, Mr. Bernard Dicksee.

BUSINESS PREMISES, BRIDGWATER.—A new branch establishment has been erected for Messrs. Bouchier Brothers, in Eastover. The building was erected by Mr. C. Bryer, jun., in accordance with plans prepared by Mr. J. Munro Chick, of Somerton.



The Old Dutch Pargetted House, Bristol. From a Sketch by Mr. A. C. Conrade.

THE OLD DUTCH HOUSE, BRISTOL.

THIS is a sketch by Mr. A. C. Conrade of a well-known old Bristol house. It was in danger of demolition some little time back, but in October last the Town Council decided, by fifty votes to fourteen, to preserve it, for the present at all events.

SOME GERMAN SUGGESTIONS ON THEATRES.

THE last issue of the *Berliner-Architekturwelt*, briefly alluded to under the head of "Magazines and Reviews" in our last issue, contains, in addition to the illustrations, an essay by Dr. Hans Schmidkunz under the title "Theater bau," in which he enumerates some of the difficulties to be contended with in such buildings, and suggests solutions for the same. One of the greatest obstacles in the architect's path is the fact that the man for whom the theatre is to be built looks upon him as an employee on his client's staff, and not only dictates to him, but prevents him from claiming recognition as the author of the design.

A praiseworthy attempt in recent times to make theatres "expressive" buildings has unfortunately created dangerous pitfalls. Some designers take it for granted that structural straightforwardness is synonymous with artistic perfection. Again, the variety of rounded and angular spaces required internally is apt to give the exterior an artificial appearance of intricate geometrical design, as illustrated by Garnier's Opera House in Paris; while to correct this the temptation is great to sacrifice the internal arrangements to the external elevation.

The problem of harmonising technical æsthetic and financial questions is gradually being solved by reducing the size of the building. The small theatre is ousting the large one, and, although Chicago boasts of a house which seats 8,000 spectators, it has been realised generally that the large theatres of olden days are quite unsuited to modern times.

There are other points, vastly different, yet inseparable from each other, which are still far behind an ideal state of matters, viz., acoustics, optics, and circulation. The science of acoustics has made so little advance that Langhaus' treatise, written in 1810, is still the reference-book in Germany for theatre acoustics.

Wagner much improved the optics or scenic effect by advancing the stage over the heads of the orchestra and by plunging the audience in total darkness. This latter change was, however, accompanied by this disadvantage that in musical drama text-books, almost a necessity, cannot be used. However, in the Lortzing Theatre, Berlin, this difficulty has been ingeniously overcome by providing shaded electric lights to each stall. Another much-required change is a greater inclination of the floor of the stalls. At present the angle is so small that the slightest object in front hides the stage from those seated in the rear.

Another solution is also required for the exits and the cloak-rooms. These arrangements are so defective that blocks and stoppage of circulation give rise to grave dangers. Austrian architects have evolved clever plans to combat the former evil, but in Berlin, where theatres, for economical reasons, are not detached buildings, these plans cannot be adopted, and the evil continues. To reduce the discomfort attendant on cloak-rooms the Dessau and Karlsruhe Theatres are trying the experiment of supplying pegs on the corridor walls on which to hang hats and coats, but it remains to be seen whether this policy of confidence will prove a workable solution.

HOUSING REFORM.

ON Saturday last week, at Caxton Hall, Caxton-street, Victoria-street, Westminster, S.W., a Home Counties and Greater London Reform Conference was held under the auspices of the National Housing Reform Council, Alderman William Thompson, Chairman of the Council, presiding. Among those present were Mr. James Rowlands, M.P.; Mr. Philip Morrell, M.P.; Mr. T. C. Horsfall, Chairman of the Manchester Citizens' Association; Councillor Nettlefold, Chairman of the Birmingham Housing Committee; Mr. H. Brodie, M.P.; Mr. L. Lever, M.P.; Mr. Gibb, M.P.; and other representatives of Town Councils, Urban and Rural District Councils, etc. The Bishop of London wrote expressing regret at his inability to attend and his sympathy with the objects of the meeting.

The object of the conference was to consider (1) the general amendment and extension of Housing Laws; and (2) the better planning of new housing areas.

The conference, as explained by Mr. H. R. Aldridge (Sheffield), the Secretary, was one of a series arranged to take place in different parts of the kingdom with the object of endeavouring to awaken sufficient public interest and civic enthusiasm to bring about the steady destruction of all existing slum areas, and the absolute prevention of new slums. The council considered it a matter of national disgrace that despite all the condemnation in the Press and on the platform the slum was still permitted to waste human life. More men, women, and children were killed by slums and bad conditions every year than in any war. The case for dealing with all new housing areas was equally urgent. It was a sin against humanity that these gardenless streets and wretched rows of brick boxes with slate lids should grow up mushroom fashion around our cities. There might be differences of opinion as to method, but all kindly and humane men and women were with them in their demand that the jerry planning of to-day should cease, and wise planning on Bournville and Port Sunlight lines be substituted.

The Chairman said that from the terms in which it had been announced the Bill promised by the Government would deal with housing both in the rural and urban districts. However much parties might dispute about other questions, it seemed to him and to those with whom he was associated that the time had come when they might have a truce of God with regard to this fundamental question of the housing of the people. They wanted the contending factions in Parliament to see what might be done by sinking their differences, by giving way on a point here and a point there. They (the National Housing Reform Council) still took it as the basis of their association that there was no only way of settling the question. They desired, so far as possible, to be inclusive, and not exclusive. With regard to nine-tenths of the questions they had raised, they thought there was great hope of getting some agreement among politicians. At the very root of the housing question was the land question. Without some alteration in the powers of planning the town it was impossible to get a satisfactory solution of the difficulty. In some of the suburbs the land had increased in price more than threefold in consequence of the development of the tramway service, and the increased value thus created was far more than the whole cost of the tramways themselves. What they wanted was a big central body which should have comprehensive powers with regard to all questions of town and village extension. For his own part, he did not believe in subsidised housing. In some cases there might be some justification for it, but he regarded this as a very last resource. He attached very great importance to gardens, and also to the question of cheap building of cottages. In his view also tenants should not be allowed to compound for their rates and taxes, but should pay these separately, in order that they might know how much they were contributing towards public expenditure. He earnestly hoped that the towns would be dealt with as well as the villages. Our towns did not grow; they "slopped over," and the deserted villages needed to be thoroughly organised in regard to housing. Funds were needed to buy land, to build houses, and for the transit of the working classes from their working places to

their homes. One central authority should be created to administer the fund, to stimulate the local authorities, and to co-ordinate the schemes. They should not multiply authorities; they should have only one. In dealing with the present deplorable state of things there should be a survey, and where houses were unhealthy they should be closed; where neglected, inspected and repaired; where unsuitable, adapted and completed; and, if they were insufficient, new ones should be provided. They wanted new accommodation, better and cheaper, planted in healthier surroundings. The shackles which hampered local authorities should be removed. The law should be amended, so that the legal preliminaries to the purchase of land might be less burdensome, and the by-laws for building should be altered, so that the building of cheaper dwellings might be made possible on a large scale. He strongly urged that the State advances for loans for housing reform ought not to be charged at 4¾ per cent., as was now often the case, but should never be more than 2¾ per cent., the interest charged in Ireland. No township should be obliged to spend more than 200*l.* in future on a workman's cottage, unless there were special and unavoidable charges.

Mr. T. C. Horsfall (Chairman of the Manchester Citizens' Association) moved the following resolution:

This conference trusts that the promised legislation of the Government on urban and rural housing this Session will deal specially with the proposals of the Select Committee on rural housing, and that it will promote the provision of cheaper and better dwellings for the people, with healthier surroundings, by:—

(1) Conferring on local authorities (which should be assisted and advised by a Central Land and Housing Commission) powers for making town extension plans;

(2) Encouraging the adoption of more adaptable and effective by-laws; and

(3) Providing facilities for the cheaper and easier acquisition of land, and for its valuation and taxation.

He expressed the opinion that the dangers of our present housing system arose not so much from the bad condition of the homes of the people as from the bad surroundings in which they were placed. Nature had been excluded from the towns, and, if the race was to be saved, local authorities must have absolute power to acquire land, at least within the limits of their own areas.

The resolution was seconded by Mr. Philip Morrell, a member of the Select Committee on Housing, who thought that the division between classes in our towns was a calamity. They ought to enable the working classes to have something approaching to the lawns and drives which improved the sanitary conditions of the residences of the rich.

Mr. John Nettlefold took up particularly the subject of town planning as the first necessity towards slum reform. By town planning, anticipating the increased facilities for traffic, which only increased the value of the land it was proposed to build upon, they might get, at no extravagant rate, better housing in the sweetest surroundings. They could get rid of the jerry-builder, and build themselves at 150*l.* a house. The question of sites must be settled by legislation.

Mr. H. J. Fowley (Reigate) deprecated the transfer of powers from the local authorities to county councils, as recommended by the Special Committee on Rural Housing. He was a profound believer in the virtue of self-government, and distrusted centralisation.

The Secretary interjected that the council were in no way committed to the proposal to transfer powers from the rural councils to the county councils.

Mr. Young (Barking) said that in his district they had cottages which, though a rent of 5s. 6d. a week only was charged, were as fit for a prince as a peasant.

In the end the resolution was carried, and it was decided to forward copies to members of Parliament and local authorities, with an earnest request for their support.

PARISH ROOM, DROITWICH.—A parish room has been opened in Friar-street for the combined parishes of St. Peter and St. Nicholas. The builder was Mr. G. Crump, of Droitwich, and Mr. Henry Hulse, the surveyor, supervised the work.

THE LONDON COUNTY COUNCIL.

THE weekly meeting of the London County Council was held on Tuesday in the County Hall, Spring-gardens, Alderman Spicer, Chairman, presiding.

Loans.—On the recommendation of the Finance Committee, it was agreed to sanction the borrowing by Paddington Borough Council of 3,750*l.* for paving works; St. Pancras Borough Council for 12,723*l.* for electric lighting; and Stepney Borough Council 10,500*l.* for electric lighting. The following loan was also agreed to:—Poplar Borough Council, 1,692*l.* for paving works.

Norbury Cottages.—The adjourned Report of the Housing of the Working Classes Committee, printed in our last issue, was agreed to. The Committee recommended as follows:—

"(*a*) That the estimate of expenditure on capital account of 13,436*l.*, submitted by the Finance Committee in respect of the erection of fifty-two cottages on the first part of section B of the Norbury estate, be approved.

(*b*) That expenditure on capital account not exceeding 13,436*l.* in respect of the erection of fifty-two cottages on the first part of section B of the Norbury estate, be sanctioned; that the tender, amounting to 12,794*l.*, of Messrs. F. & T. Thorne for the erection of the cottages be accepted; that the solicitor do prepare and obtain the execution of the necessary contract to give effect to the tender."

Equalisation of Rates.—The Local Government, Records, and Museums Committee recommended as follows:—

"(*a*) That, subject to a satisfactory scheme of equitable adjustment and financial control being submitted to the Council, the principle of an ultimate equalisation of rates in the Administrative County of London be approved.

(*b*) That it be referred to the Finance Committee and the Local Government, Records, and Museums Committee to prepare and submit to the Council a scheme for financial control by the central authority of local expenditure and for financial adjustment as between the local authorities with a view to effect being given to the principle of an equal rate in the pound throughout the Administrative County of London.

(*c*) That, pending the preparation of a scheme of the nature indicated in resolution (*b*), the Finance Committee and the Local Government, Records, and Museums Committee do prepare and submit a scheme for as large an immediate equalisation of poor law expenditure as may be found practicable.

(*d*) That the reference made on March 18, 1902, to the Local Government and Taxation Committee "to consider the question of further equalisation of the rates of London, and in particular, the equalisation of the whole of the poor law expenditure and of the sanitary and public health expenditure, and to bring up a draft scheme by which such equalisation may be carried out," be discharged."

The recommendations were agreed to after considerable discussion.

Tramways.—The following recommendations of the Highways Committee were agreed to:—

"(*a*) That the supplemental estimate of expenditure on capital account of 44,000*l.*, submitted by the Finance Committee, be approved in addition to the estimate approved on December 4, 1906, for the purchase of additional electric cars required for use on the Council's tramways.

That expenditure on capital account not exceeding 250,075*l.* be sanctioned in connexion with the supply of 300 tramcar bodies and electrical equipments, including car ploughs, trolleys, etc.

That the tender, amounting to 122,375*l.*, of Hurst, Nelson, & Co., Ltd., for the manufacture, supply, and delivery of 250 tramcar bodies be accepted; that the solicitor do prepare, and obtain the execution of, a contract to give effect to the tender.

That the contract to be entered into with Hurst, Nelson, and Co., Ltd., in pursuance of the foregoing resolution, do provide for payments to be made, when possible, by the Council to the contractors according to the progress made from time to time with the completion of the tramcar bodies.

That the manufacture of fifty tramcar bodies be carried out at an estimated cost of 23,150*l.* under the management of the Highways Committee by the direct employment of labour in accordance with standing order No. A 167.

That the tender, amounting to 100,950*l.*, of the British Westinghouse Electric and Manufacturing Company, Ltd., for the manufacture, supply, and delivery of the electrical equipments for 300 tramcars and the assembly of the cars, be accepted.

That the contract to be entered into with the British Westinghouse Electric and Manufacturing Company, Ltd., in pursuance of the foregoing resolution, do provide that in the event of the market price of copper falling below 118*l.* a ton, the actual price to be paid for the equipments be based upon the market price of copper on the first day of January, May, and September respectively.

That the British Westinghouse Electric and Manufacturing Company, Ltd., be allowed to sublet to such person or firm as may be approved by the chief officer under their contract the supply of such trolleys as may be required."

Planning of Schools.—The Report of the Education Committee on the planning of schools was considered, and the following recommendation was agreed to:—

"That in the twenty-eight public elementary schools which the Council is proposing to erect during the next five years, no classrooms in the senior departments be planned to accommodate more than forty scholars, and no classroom in the infants' department for more than forty-eight, except in particular cases in which, in the opinion of the Education Committee, there are circumstances which render any modification in the design or character of the building desirable."

The Report was printed in full in our issue for December 22 last.

King's-road, Chelsea.—The Improvements Committee recommended, and it was agreed—

"(*a*) That the estimate of expenditure on capital account of 2,314*l.*, submitted by the Finance Committee in respect of the widening of King's-road, Chelsea, at Nos. 402 to 428, be approved.

(*b*) That, subject to the Chelsea Metropolitan Borough Council agreeing to give, as and when required by the Council, any necessary consents to the introduction of a bill to authorise the Council to construct a tramway in King's-road, at Nos. 402 to 428, expenditure on capital account not exceeding 2,314*l.* be sanctioned in respect of the widening of the thoroughfare as specified in resolution (*a*); that a contribution be made, on the usual conditions, of two-thirds of the net cost of the widening proposed to be executed by the borough council in accordance with the plan, provided (i.) that if the total net cost exceed 3,471*l.*, such contribution shall be limited to 2,314*l.*, and (ii.) that in the execution of the improvement no departure whatever be made from the approved plan, except with the previous sanction of the Council.

(*c*) That no portion of the Council's contribution, as specified in resolution (*a*), towards the cost of the widening of King's-road at Nos. 402 to 428 be charged to the tramways account."

Theatres.—The following proposals of the Theatres and Music Halls Committees were agreed to:—

"A new upper hall at the Durning Mission Hall, Elsa-street, Limehouse (Mr. A. S. Tayler).

Arrangements in connexion with the Furniture Trade Exhibition (Mr. A. O. Collard).

Arrangements in the annexe at Olympia in connexion with the forthcoming Building Trades Exhibition (Mr. F. H. Payne).

Additional radiators at Wandsworth Town Hall, High-street."

Competition for Designs of the New County Hall.—The Establishments Committee reported as follows:—

"With regard to the date for receiving designs of the new County Hall in the preliminary stage of the competition, it is anticipated that the conditions, plans, etc., will be all ready for issue to intending competitors by February 27, 1907.

The advertisement announcing the competition will appear in the *Times* of February 27, 1907, in the issue immediately prior to that date, of certain English technical papers, and as early as practicable in the foreign technical papers, so as to enable the applications of intending competitors from the continent to be dealt with by the time the particulars are ready. Taking February 27, 1907, as the date when the competition is publicly announced, the designs for the first stage should be delivered six months later, that is by noon on August 27, 1907."

The Council adjourned at seven o'clock.

APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses:—

Lines of Frontage and Projections.

Hackney, North.—Twenty-four houses on the western side and seventeen houses on the eastern side of Mountfield-road, Hackney, with bay-windows projecting more than 3 ft. from the main wall of the buildings and nearer to the centre of the nearest party wall than the extreme amount of their projection (Mr. J. Ellgood for Mr. S. H. Barclay).—Consent.

Holborn.—The retention of a projecting sign at No. 252, Tottenham-court-road (Messrs. Wolfe & Hollander, Ltd.).—Consent.

Kensington, North.—Twenty-four houses with bay-windows, pent roofs and porches, on the northern side of Oxford-gardens, St. Quintin-park, Kensington, between High Lever-road and Wallingford-avenue (Messrs. Trant, Brown & Humphreys for Messrs. Daley & Franklin).—Consent.

Kensington, South.—Buildings on the western side of Gloucester-road, Kensington, to abut also upon the northern side of St. George's-place (Mr. P. Hoffmann for Mr. J. C. Hill).—Consent.

Marylebone, East.—Retention of a projecting oriel window at the rear of No. 44, Harley-street, St. Marylebone, abutting upon Manfield-mews (Messrs. Boehmer & Gibbs for Dr. Wynne York-Davies).—Consent.

St. George, Hanover-square.—A projecting porch in front of No. 50, Grosvenor-street, St. George, Hanover-square (Mr. W. Woodward for Mr. W. Burns).—Consent.

St. George, Hanover-square.—A porch and balconies at No. 32, Grosvenor-square, St. George, Hanover-square (Messrs. Ayling & Littlewood for Messrs. J. Garlick, Ltd.).—Consent.

St. Pancras, South.—That the application of Mr. A. Swash for an extension of the period within which the erection of a building on the site of Nos. 11A and 11B, Upper Woburn-place, St. Pancras, at less than the prescribed distance

from the centre of Woburn-buildings, was required to be commenced, be granted.—Consent.

Wandsworth.—The erection of a shop front at No. 49, Lavenham-road, Southfields (Mr. C. A. West).—Consent.

Wandsworth.—A one-story shop in front of No. 644, Streatham High-road, Streatham (Messrs. H. M. & W. Grellier for Mr. G. Seth Mines).—Consent.

Wandsworth.—Projecting porches and wooden oriel windows to six houses on the northern side of Heybridge-avenue, Streatham (Mr. P. C. Davies).—Consent.

Wandsworth.—One-story shops in front of Nos. 142, 144, 146 and 148, Cavendish-road, Balham (Mr. J. H. Beare).—Consent.

Kensington, South.—A covered way to a building between Nos. 7 and 11, Addison-road, Kensington (Mr. A. J. Hopkins for Mr. E. R. Debenham).—Refused.

Kensington, South.—Buildings upon the site of Nos. 197 to 215 (odd numbers only), inclusive, Kensington High-street, Kensington (Mr. W. L. Eves for Mrs. F. A. Stevens).—Refused.

Lewisham.—A one-story coal office building on the eastern side of Baring-road, Lewisham, abutting upon the entrance to the Grove-park station goods yard (Mr. A. Durbin).—Refused.

Norwood.—Buildings upon a site abutting upon the southern side of Trinity-road, Norwood, and the eastern side of Tulse-hill (Messrs. Stanley Parkes & Brown for Messrs. S. L. Sandell and R. Pennington).—Refused.

Wandsworth.—Shops and dwelling-houses on the northern side of Sunnyhill-road, Streatham, to abut also upon the western side of Harborough-road (Mr. C. M. Quilter for Messrs. F. T. Wooding & Son).—Refused.

Width of Way.

Kensington, South.—Additions at the rear of No. 32, Kempsford-gardens, Kensington, at less than the prescribed distance from the centre of Kramer-mews (Mr. J. Codrington for Mrs. J. Bradford).—Refused.

Width of Way and Line of Frontage.

Hackney, North.—A building on the northern side of Amhurst-park, Stamford-hill, at less than the prescribed distance from the centre of the roadway of Holmdale-road (Mr. S. C. Rookwood for Mr. H. Chambers).—Refused.

Line of Frontage and Space at Rear.

Paddington, North.—A deviation from the plans approved for the erection of buildings on the northern side of Harrow-road, Paddington, westward of No. 474, so far as relates to the retention of a portion of the land which the parties necessarily interested have covenanted to dedicate to and leave open for the use of the public (Sir J. H. Bethell, M.P. for the London and South-Western Bank, Ltd.).—Consent.

Lines of Frontage and Construction.

Clapham.—Retention of a wood and iron building of a temporary character at the flank of No. 3, The Terrace, Queen's-road, Battersea (Mr. C. Brawn).—Consent.

Hampstead.—Balconies at the Hampstead General Hospital, Haverstock-hill, Hampstead (Messrs. Young & Hall).—Consent.

Deviation from Certified Plans, Projections and Construction.

Strand.†—A building upon the site of Nos. 91 and 92, Jermyn-street, and Nos. 6 and 7, Ormond-yard, with projecting oriels and a porch on the Jermyn-street frontage, and with an external lift in one of the areas (Mr. de H. Duval).—Consent.

Space at Rear.

Kensington, North.—A modification of the provisions of sect. 41 of the Act with regard to open spaces about buildings, so far as relates to the proposed erection of a one-story stable building at premises approached out of the eastern end of Park-street, Latimer-road, Kensington (Mr. J. P. Williams for Mrs. Keen).—Consent.

Uniting of Buildings.

St. George, Hanover-square.—A modification of the provisions of sect. 77 of the Act, so far as relates to the formation of an opening at the ground floor level, to connect Nos. 162 and 164, Ebury-street, Pimlico (Mr. R. G. Hammond for Mr. J. Garlick).—Consent.

Conversion of Building.

Peckham.—The re-conversion into two dwelling-houses of Nos. 14 and 15, Batchelor's Hall-place, Peckham (Mr. E. J. Strevens for Mr. Widmer).—Consent.

Formation of Streets.

Wandsworth.—That an order be issued to Messrs. Walton & Lee sanctioning the formation or laying out of new streets for carriage traffic upon the Lynwood estate, Upper Tooting-road, Tooting (for Mrs. M. J. Miller).—Consent.

Dwelling-houses on Low-lying Land.

Rotherhithe.—That a licence be granted under sect. 122 of the Act to Mrs. Lillico for the erection of a shop and dwelling-house on low-lying land situated at No. 73, George-row, Bermondsey (Messrs. Dunsmore Brothers on her behalf).—Consent.

The recommendation marked † is contrary to the views of the local authorites.

Architectural Societies.

SHEFFIELD SOCIETY OF ARCHITECTS AND SURVEYORS.—The usual monthly meeting of this Society was held on Thursday last week at the rooms in Leopold-street, when the Hon. Secretary (Mr. J. R. Wigfull) lectured upon "The Architectural Treatment of Plasterwork."—Mr. E. M. Gibbs presided.—The lecturer briefly sketched the history of plasterwork from early times, describing its use by the early Egyptians, the canvas plaster of whose mummy cases was similar in many respects to the modern fibrous plaster. Reference was made to the extensive use of modelled plaster in the Palace of Knossos in Crete, much of which was highly coloured. The use of plaster or stucco by the Greeks and Romans was dealt with, and quotations from the writings of Vitruvius were given showing how the materials were prepared and used in his day, a period just prior to the Christian Era. Coming to what is comparatively a more recent time, the lecturer described the use of plasterwork in the Renaissance period, and the extensive use of this form of decoration in the buildings erected in this country during the XVIth century. A quotation from the note-book of Pirro Ligorio, now in the Bodleian Library at Oxford, was interesting, as practically, allowing for difference of materials, the method of preparing and laying stucco therein described is identical with that advocated by Mr. F. Hill, a practical plasterer who took part in the discussion following the lecture. By means of a series of slides of old plasterwork, the lecturer showed what, in his opinion, was the correct method of dealing with the material. He deprecated the use of undercut ornament, which gave an appearance of weakness or instability, and totally at variance with the nature of the material, arguing that low relief in the ornament was much more suitable. The English form of ceiling of the XVIth century, where the surface was covered by a pattern formed by interlacing ribs or ornament in low relief, was the proper method, and more suitable to the material than the treatment adopted at a later time. The revival of a more correct style by Robert Adam during the latter part of the XVIIIth century was referred to, for, whatever might be thought of some forms of ornament used by him, his general treatment of the material was eminently suitable to its capabilities.—The lecture was followed by a discussion, in which Messrs. C. F. Innocent, A. E. Turnell, H. L. Paterson, W. J. Hale, F. Hill, W. Jones, and the Chairman took part. The opinions of Messrs. F. Hill and W. Jones, two practical men of much experience, upon the proper methods of preparing the materials, were much appreciated, and the feeling was expressed that much benefit would accrue to all if architects and members of the various building trades could more frequently meet and discuss together the practical and artistic details connected with their work.

MANCHESTER SOCIETY OF ARCHITECTS.—The seventh general meeting of the students of this Society was held on the 12th inst. Mr. H. Arnold Turner read a paper on "Architects' Estimates." He began by showing what an immense help an accurate method of estimating was to young architects. It was true that as a rule the habit of estimating correctly only came after years of practice, but the student could soon gain a considerable amount of valuable knowledge if he only kept his ears and his note-book open. A very good method for a pupil was to cube out a building which was being designed in the office, price it at a certain figure per cube foot, and then when the building was finished let him check his cubing with the finished contract. The lecturer also made a very strong point of the question of "rough quantities," and also recommended in some cases the use of putting a value for so much a super. yard on the floor areas of the building, and then measuring the floors and multiplying out. He illustrated his remarks by quoting the prices in different buildings with which he had come into contact, and gave a considerable mass of figures showing the various prices of different building materials. Mr. J. H. Woodhouse took the chair during the first part of the evening, and Mr. A. E. Corbett later. A discussion took place after the paper.

EDINBURGH ARCHITECTURAL ASSOCIATION.—The members of the Edinburgh Architectural Association discussed the subject of the proposed restoration of Holyrood Chapel on the 13th inst. Mr. Hippolyte J. Blanc, R.S.A., presided.—Mr. James Bruce, W.S., who introduced the subject, moved: "That, looking to the public interest that has been aroused on the question of the repair and restoration of the Chapel-Royal, Holyrood, through the intimation of a legacy of 40,000*l.* for these purposes by the late Earl of Leven and Melville, it be remitted to the Council to report upon the following points, viz.:—What remains of the structure exist; (2) the conditions and capabilities of the parts remaining; (3) whether the evidence of these parts is sufficient to enable a satisfactory repair and restoration of the structure to be made." If the Council, he said, took this matter up they would be rendering a service not only to the architectural profession in Edinburgh but to Scotland as a whole. What they wanted to know was the real state of matters with the old Abbey Church at Holyrood. Holyrood Chapel was one of the most interesting buildings remaining in Edinburgh of that extremely early age. In respect of its intimate connexion with the Royal Family of the country and with the history of the country it occupied a position in Scotland somewhat analogous to that of Westminster Abbey in England. Of course, the fate of Holyrood had been very much different from Westminster. If they could do anything in the way of helping in the preservation of the remaining part of the chapel they would only be too glad. A report had come from Professor Lethaby that restoration and repair were practically impossible. When he (Mr. Bruce) saw those old walls, some over 10 ft. thick, it looked to him as a layman inconceivable that repair and restoration was impossible. He desired the Council to report upon what remained of the original building; what conditions these remains were in; whether there was enough remaining to enable the parts that had gone to be supplied just as they originally were; and what were the capabilities of the remains of the structure. If it was found that there was a large amount of remains that were in a fairly satisfactory condition, and that what remained of them could accurately show what had been lost, and if it could be made clear that the proposed work would not ruin the existing portion, then he thought the work should certainly be done. If the restoration was such as had been supplied to the outside of St. Giles' Cathedral, he would say it should never be done. If, however, it was a restoration such as had been done in the inside of St. Giles', then he said by all manner of means it should be done. If the Committee investigating the matter came to the conclusion that it could not be done, then he was afraid they must accept the verdict with great regret; but if they agreed it could be done with safety, their report would be hailed with delight throughout the country. Should there be any difficulty about Lord Leven's bequest, and if it was found possible to repair and restore Holyrood Chapel without that bequest, he felt, in the patriotism or thoughtfulness of Scotsmen at home and abroad, that the matter would be carried through. The Chairman said he felt the public naturally looked to the Association to give them a lead and guidance. The intention was to place before a number of intelligent architects in Edinburgh and Scotland the circumstances as they existed, to examine and report. He felt it was their plain duty to accept this remit, and ask the Council to deal with it as early as possible. The motion was unanimously agreed to.

THE ROYAL INSTITUTE OF THE ARCHITECTS OF IRELAND.—A special meeting of the Council was held at 20, Lincoln-place, Dublin, on the 18th inst. The President occupied the chair. There were also present: C. A. Owen, A. E. Murray, C. H. Ashworth, H. Allberry, F. Batchelor, G. P. Sheridan, R. C. Orpen, G. C. Ashlin, F. G. Hicks (Hon. Treasurer), and James H. Webb (Hon. Secretary).—A recommendation from

the Professional Practice Committee with reference to asking the Local Government Board to receive a deputation from the Council was before the meeting. The Committee was asked to prepare a statement of the facts.—The other business before the meeting was of a confidential nature.

Competitions.

ARTIZANS' DWELLINGS, CHILD'S HILL.—Designs were recently submitted in a limited competition for artizans' dwellings at Child's Hill, Middlesex, for the Hendon Urban District Council. The design by Mr. George Hornblower was placed first, and those by Messrs. Stanley Barrett & Driver and Mr. John Hudson second and third respectively. The contemplated outlay, exclusive of road formation and sewers, is 32,600*l*.

HENSHAW'S BLIND ASYLUM, MANCHESTER.—In the competition for additions to this asylum the assessor, Mr. Holden, F.R.I.B.A., has placed the design of Mr. Mayor first, Mr. H. Lord second, Mr. G. H. Willoughby third, and has commended the design of Mr. Theodore Sington. It is stated that the Board of Managers have thrown over the assessor's award and given the work to another architect. We hope this may be contradicted. Unless there is some special and at present unexplained reason, it is a very improper proceeding.

Trade Catalogues.

THE General Electric Company send us an illustrated catalogue of their electric glow radiators, which are most efficient as heat-producers; we only wish the form of the lamps were less ugly. In the holders, which may be regarded as taking the place of the grate in connexion with an ordinary fire, a successful attempt has been made in some instances at a simple artistic treatment of the metal work, as in the designs marked H 374, H 378, and H 404; what are supposed to be the "ornamental" ones are very bad. But even in the good metal designs these long glass lamps ending in a point at the top will always be ugly, and it would be better to screen them with a well-designed grille, even at the cost of losing a little heat. We have received from the same Company a catalogue of "Angold" arc lamps. Many new types of this well-known arc lamp are described. We were specially interested in the description of the "Angold" flame arc lamps. A drawback to flame arc lamps is that the carbons want renewing about every ten hours. In this type an arrangement for "magazine feeding" is adopted, and so they will run for forty or fifty hours without attention. The carbons also are made without a metal core, and they are thus much cheaper than the ordinary flame arc carbons. Special arrangements have been made to lead the fumes straight into the open air, and hence the trouble which sometimes ensues from the mechanism getting clogged by a deposit of ash is minimised. Anyone interested in arc lamps should write for this catalogue.

The Lahmeyer Electrical Company send us an illustrated circular describing their variable speed continuous current motors, which are specially adapted for driving machines requiring to be operated at different speeds according to the nature of the work to be done. In the past, the variation of speed was effected by means of cone pulleys or differential gear. All such devices involve considerable waste of energy, and until recently electric motors capable of speed variation within wide limits have not been generally available. The motors described in the present circular are shunt-wound and fitted between the main poles with compensating poles wound in series with the armature. The compensating magnets are situated in a special magnetic field, the surface and strength of which is adequate to insure sparkless commutation. The motors are controlled by means of a regulator of the type generally applied to shunt-wound motors. The Lahmeyer Company supply variable speed motors in three different classes for speed regulation up to 1 : 3, 1 : 6, and 1 : 12, the speed remaining constant at varying loads. The advantages claimed for the new type of motor are variable speed at constant output without loss of energy, sparkless running at all loads for any speed and for either direction of rotation, fixed brush position for either direction of rotation, and simplicity of regulation. Motors of this kind are particularly suitable for driving machine tools of all kinds, which can be fixed in any convenient position or moved from place to place if desired, as line shafting pulleys and belts are not needed.

We have received from Messrs. Young & Marten a copy of their small catalogue No. 8, entitled "Leading Lines," which contains illustrations and prices of drain-pipes, tiles, woodwork, glass, lead, brasswork, sanitary fittings, cast-iron goods, stable fittings, stoves and grates, paints and varnishes, etc.

The British Luxfer Prism Syndicate, Ltd., have sent us a leaflet containing illustrations of their patent improved roof-glazing. The special feature is the T-shaped steel glazing-bar, entirely covered with lead, and with lead wings. An alternative section shows a plain steel bar with a lead cap on the top overlapping the glass.

Messrs. Stavers & Stavers have sent us a sheet containing illustrations and prices of some of the doors and French casements made by them, and distinguished as the "Arrow" brand. Some of the designs are distinctly good, and the prices are given in all cases.

Messrs. Rowland Brothers (Bletchley) have sent us their fully-illustrated catalogue of oak and other wood fencing, small and large gates, etc. Some of the designs are of well-known types, and nearly all have the merit of simplicity.

Mr. J. Tiranti sends us an illustrated catalogue of his large collection of casts of decorative sculpture and architectural carved ornament of various periods, mostly French and Italian. The prices for casts seem very moderate.

Correspondence.

TRINITY CHAPEL.

SIR,—The Trinity Chapel referred to in Mr. Macartney's valuable paper on "Regent-street," read before the Architectural Association on February 8 and published in your last issue, is shown on Knyff's view of Burlington House. His drawing suggests that only the roof and fittings of the chapel on wheels from Hounslow Heath were utilised, as the front and sides are apparently in brick. This chapel was taken down in 1690, and re-erected on the south side of Conduit-street, then being laid out, where it was known as Trinity Church, where Evelyn went on July 16, 1691, "to hear Mr. Stringfellow preach his first sermon in the newly-erected church." In 1836 this church was entirely rebuilt, and in 1878 was pulled down to make way for Messrs. Benjamin's shop. R. PHENE SPIERS.

February 16.

BY-LAWS AS TO SCANTLINGS.

SIR,—There is a tendency upon the part of local authorities when drafting new by-laws to insert clauses which mention specific sizes for floor joists, rafters, and other timbers of ordinary use.

It is very desirable that a more reasonable method of securing sufficient strength should be adopted. New scantlings are constantly being imported, and the prohibition of their use in suitable places can only have the effect of still further inflating—quite uselessly—building prices. Of course, there is generally a proviso in the by-laws that the authority may approve of a variation in the sizes given; but while inquiries are being made as to whether this power will be exercised in any given case the opportunity of buying in a favourable market may be lost. It is also sometimes a fact that the building inspector, to whom in practice the matter is generally left, is a man unfitted by want of education to decide whether a suggested scantling is sufficient or not; and even when he is capable it appears little short of ridiculous that a special permit should be needed to determine such a point. Cannot a simple formula be inserted in the by-laws, so that everyone wishing to build can tell for himself with certainty whether any given timber can be legally used in a particular position?

The principle I suggest might advantageously be applied to steel and iron work more generally than at present. The Board of Trade lay down limiting stresses for certain materials in special cases; some such limits might well be incorporated in building by-laws; but all in any way interested in building should combine to secure the elimination from the regulations of long lists of dimensions whose only practical result can be to add uselessly to the red tape and expense which already sufficiently hamper building works. MATT. GARBUTT.

ZODIACS ON GEMS.

SIR,—It is evident that among various classes of art designers and workers, gem engravers have also made use of the zodiac; but as these gems, the most valued among ancient art treasures, and perhaps the most beautiful, are almost exclusively found in the private cabinets of the very wealthy, doubtless my list is very imperfect.

Babylonian.

1. Signet cylinder, bearing—man (Aquarius), bull (Taurus), horns (Capricornus), woman (Virgo). From Baylon. Boughton Collection. Dated B.C. 1824. Engraved in Landseer. ("Sabæan Researches," 1823, p. 56.)

2. Horoscopical signet cylinder, containing—hieroglyphical natal stars of a nocturnal horoscope bearing man pouring water from a vase on a globe (Piscis Australis), man with weapon (Sagittarius), eight star arrows (Corona), kneeling man (Hercules), bear (Ursa Major), man with rook (Lituus) and sickle (Falk. Bootes), star (Cynosura), two streams from mount (Tigris and Euphrates from Taurus), on an hematite. From Babylon by Lockett. Dated B.C. 1458. Engraved in Landseer, 87, 156, 203.

3. Oval agate horoscopical signet, bearing—goat, altar (Ara), crescent (Luna), and Ashera divining branch (Palma in Virgo and branch in Hercules). From Babylon, Porter Collection. Engraved in Landseer, 288.

4. Dr. Birch, of the British Museum, said that the Pleiades, sun, moon, stars, and signs constantly occurred on Babylonian cylinders. (Layard: "Nineveh and Its Remains," 1850, ii., 440.

Assyrian.

5. Jasper opal horoscopical signet cylinder, bearing—seated woman (Cassiopeia), Pleiades (in Taurus), Aldeberan (in Taurus), pole star, chained woman (Andromeda), woman, scale beam (Libra), winged sun globe in belt (Sol in Zodiac), and zodiacal revolving Ashera with twelve fruits. From Antioch. Boughton Collection. Engraved in Landseer, 263.

Egyptian.

6. Green jade scarabæus, being a very ancient Æthiopeian horoscopical signet, bearing—Cassiopeia, Andromeda, Cynosura, Pleiades, Aldebaran, Hyades, Cruxansata (Venus). In British Musuem. Engraved in Landseer, 361.

7. The following signs have been found on ancient Egyptian signet ring stones—Scarabæus (Cancer), lion, scales, goat, water (Aquarius), serpent, eagle.

Greek.

8. On a gem, surrounding Zeus. Engraved in King: "Antique Gems," 1872, i., 243.

9. On an Egyptian emerald, surrounding Zeus and the Dioscuri. Praun Collection. Engraved in King, i., 252.

10. Around a large circular gem, surrounding Zeus enthroned with sceptre and fulmen, Poseidon with trident beneath an arch, Hermes with caduceus, purse, and cock, and Ares with spear and Gorgon shield; diameter, 2¼ in. A cast of it is in a Roman collection of casts, tray 5, No. 225.

11. On a sardonyx gem, around Zeus, Hermes, Ares. Fould Collection. Engraved in King, i., 243.

12. On a gem, surrounding Phœbus. La Chausse Collection. Engraved in Montfaucon, i., pl. lxvi.

13. On a gem, around Serapis and the planetary deities. Bosanquet Collection. Engraved in King, i., 252.

14. A similar or the same gem as No. 13 is engraved in Caylus: "Recueil d'Antiquities," 1752.

15. On a gem is Phœbus driving through the signs Cancer to Capricorn, holding up three fingers. Engraved in Smith: "Dictionary of Greek and Roman Biography and Mythology," title.

16. On a gem, around a quadriga. Egyptian order of the signs; diameter 3·5 in. Cast of it is in the Roman Collection, tray 7, No. 347.

17. Round a gem, surrounding Zeus over an eagle, Hermes with petasus, Aphrodite, Eros;

diameter 1 in. Cast of it in a valuable collection of casts at Eastry, No. 772.

18. Round a gem, surrounding Phœbus in quadriga with whip; oval 1 × ½ in. Cast of it in Eastry Collection, No. 773.

19. On a gem, around Zeus, Hermes, Ares, Virgo with a unicorn; round, $2\frac{3}{16}$ in. diameter. Cast of it in the Eastry Collection, No. 1030.

20. On a sardonyx gem, around Victory and a quadriga. Marlborough Collection. Engraved in Worlidge. ("Antique Gems," 1768, No. 52.)

21. On a gem is Minerva riding a Centaur with Virgo, Libra, Aries, Leo. Engraved in Raspe. ("Descriptive Catalogue of Engraved Gems," No. 3169.)

22. Oval horoscopical signet, bearing—Sagittarius, sun, crescent, lunar dragon with fourteen head rays for moon's days of increase, busts of Zeus, Aphrodite, Pan, Castor, Pollux, two balls joined by a bar (Libra), square (quartile aspect), six-rayed star (sextile aspect). Boughton Collection. Engraved in Landseer, 41.

23. Onyx gem, bearing—bull, seven stars (Pleiades), three women (Hyades). Wisden Collection. Cast of it is in the Tassie Collection. Engraved in Landseer, 116.

24. Circular gem, bearing—Zeus, Aphrodite, Eros, Hermes, eagle. Engraved in Kingsford. ("Astrology Theologized," 1886, 49; and in "Enoch," ii., i.

Roman.

25. On a large gem, surrounding Jupiter, Mercury, Venus. Cast of it in the Classical Museum at Dusseldorf, Room 1.

26. On a gem, around Jupiter with mural crown, rod, fulmen, eagle, seven stars. Sulphur cast of it in the Tassie Collection. (Raspe, i., 219.)

27. On a gem, around Jupiter, Venus, Cupid, Mercury. Bourdaloue Collection. Engraved in Montfaucon, Supp. i., pl. xviii.

28. On a chalcedony gem, around Serapis between Isis and Minerva and Atlas. Arundel Collection. (*Archæological Journal*, xix., 13.)

29. On a gem, around Serapis and planetary deities. King, i., 252. Engraved in Caylus.

30. A similar gem to No. 29 was in the Bosanquet Collection. King, i., 252.

31. Oval gem, bearing the signs in divisions; with Sol, Venus, Mercury, Luna, Saturn, Mars, Juno in chariots in an outer circle, all surrounding Pan. Stosch Collection, now Petersbourg Collection. (Spence: "Polymetis.") Engraved by Orme, 1798. One of the finest gems extant.

32. The same, or a similar, gem is engraved in Mariette: "Pierre Grav.," ii., pl. 45; and in "Museo Florentino," ii., pl. 83. Fosbroke: "Encyclopædia of Antiquities," 1825, i., 147.

33. On a gem, around a rayed face, Virgo with wings and palm. Florence. Ducal Collection. Engraved in Spence, pl. xxv.

34. On a pink gem, around three deities. In the British Museum Gem Room.

35. On an oval gem, around Romulus and Remus under the wolf. Cast of it in the Dusseldorf Museum, Room 1.

36. On a gem, are the signs and emblems. Engraved in Montfaucon, II., ii., pl. clxx. ("Archæologia," xlvii., 340.)

37. On a large gem, around a seated woman playing on a pipe, with an outer circle of figures. Cast of it in the Dusseldorf Museum, Room 1.

38. On an oval gem, around a man in a quadriga. Lobster for Cancer. Cast in Dusseldorf Museum, Room 1.

39. On a large gem, around some figures. Cast of it in Dusseldorf Museum, Room 1.

40. On a large gem, sunk round a fishgoat. Lobster. Cast in Dusseldorf Museum, Room 1.

41. On a gem, around sun, crescent, wings, serpent; diameter, 1 in. Sulphur cast of it in the Tassie Collection. Engraved in Raspe, i., 220.

42. On a sardonyx intaglio, around Victory over a biga. Considered as a prize in the Circensian games. ? B.C. 217. Worsley Collection. Found near lake Thrasymenus (Perugia). Engraved in "Museum Worsleyanum," 1794, i., xxi. Savage: "The Librarian," 1808, i., 199.

43. On a cameo, around Jupiter, Mercury, Mars, Oceanus. Webb Collection. King, i., 243.

44. On a gem or cameo, Apollo in quadriga, below an arc with seven signs. Engraved in Smith, ii., title.

45. On a large gem or cameo, around Medusa's head.

46. A broken cameo, with the zodiac, stars, and winged Victory on it, was found in Tiberius villa, on the Castiglione Hill, Capri, 1786, and given to Tishbein, the painter. (Rezzonico: "Descrizione di Capri." "Notes from Isola di Capri," in *Buxton Advertiser*, March 22, 1879.)

47. On an intaglio in lapis lazuli, surrounding Jupiter, with fulmen, eagle, Pleiades. Engraved in King, ii., 78.

48. On a thin round green stone, surrounding a quadriga. Janus is seated, four men standing, Aries at the top. Intaglio; c. 2 in. diameter. In the Medal Room, Royal Library, Utrecht.

49. A "cornelian with the head of Apollo surrounded by the twelve signs of the Zodiac." Naples Museum. (Murray, 1878, 161.)

50. On a gem, Aquarius as Ganymede with eagle, crescent, and two stars. Engraved in Deverell, V., pl. ii.

Italian.

51. On a gem, surrounding Jupiter, Mars, Mercury. Renaissance. King, 243.

Some of the gems entered as Roman may be Italian, the imitation being so exact.

French.

52. Signs around an insect (? Scorpio) on a black oval gem; 1 in. long diameter. In the Bibliothèque Nationale, Paris, with a cast of it.

53. Signs around a man with trumpet, before an altar, against which a stag leaps. Dark oval agate; 2 in. long diameter. In the Bibliothèque Nationale, Paris, with a cast of it.

54. Signs around Jupiter with sceptre and fulmen, Mercury, Neptune, Mars. On a large round red cornelian intaglio gem. In the Medal Room, Bibliothèque Nationale, Paris, cast of it in the same room, No. 2391.

55. On a round jewel, with a temple on a dark stone in the centre. Modern intaglios, II., 3, No. 2395; c. 1½ in. diameter. In the Bibliothèque Nationale, Paris. Cast of it there also.

D. J.

ZODIACS IN BUILDINGS.

SIR,—Your journal is little concerned with ancient astronomy or the genesis of the Homeric songs or poems. Still, in view of "D. J.'s" valuable communications to your columns, I venture to recall a theory propounded by the late R. A. Proctor. He opined that the similar descriptions of the Shield of Hercules in a poem ascribed to Hesiod, and of the Shield of Achilles in the "Iliad," xviii., 468-617, are derived from some account by an eye-witness, possibly Homer, of sculptured representations in the temples of Egypt or Chaldæa of a celestial hemisphere with constellations and zodiacal signs, and the customarily concomitant scenes and episodes in communistic and industrial life. Thus Homer describes the dance, the vineyard, the tilling and harvest, the siege, the espousals and marriage-feasts, the strife about the blood-price of a slain man—all wrought on the shield. He specifies the river of Ocean around its rim; the earth, heaven, sea, and untiring sun; the waxing moon; all the signs that crown the sky; the Pleiades, and Hyades, and Orion's might; the Bear whom men call also the Wain, who turns in her place to watch Orion (confer also "Odyssey," v., 121 and 274, and xi., 572), and who alone does not bathe in the Ocean's sea.

Ἐν μὲν γαῖαν ἔτευξ', ἐν δ' οὐρανὸν, ἐν δὲ θάλασσαν
Ἠέλιόν τ' ἀκάμαντα σελήνην τε πλήθουσαν,
Ἐν δὲ τὰ τείρεα πάντα, τά τ' οὐρανὸς ἐστεφάνωται,
Πληϊάδας θ' Ὑάδας τε τό τε σθένος Ὠρίωνος
Ἄρκτον θ', ἣν καὶ ἅμαξαν ἐπίκλησιν καλέουσιν,
Ἥ τ' αὐτοῦ στρέφεται καί τ' Ὠρίωνα δοκεύει,
Οἴη δ' ἄμμορός ἐστι λοετρῶν Ὠκεανοῖο.

The making of the new armour by Hephaistos, at the request of Thetis, for her son after the death of Patroklos, and its detailed description, form one of the many pauses or rests with which the singer or reciter beguiles and subdues his audience in preparation for the coming catastrophe.

D-M.

CLERK OF WORKS' DUTIES.

SIR,—The primal duty of a clerk of works is *consistent and undivided loyalty to the architect* from whom he receives his instructions. The fact that his wages are paid by the client should in no degree diminish that loyalty.

He must, of course, on all occasions, listen to what the client or clients have to say, and he may, on occasion, have to act, but never should he attempt to do anything that he knows to be contrary to the architect's wishes.

As to the qualifications of the clerk of works. The first in importance is that his mind should be fully possessed by the science of building; he should be able to prove to the contractor that the clerk of works knows as much about the *practice* and *mysteries* of building as the contractor's representative. I think beyond this there is no code of rules that will apply to all jobs.

I have had jobs in London where the daily visits of the architects, calls of travellers and specialists, and the demands of adjoining owners and the various local authorities have taken up most of my time. I have had other jobs away from the "City's clustering roofs," where the architect's visits are rare, and without any of the aids and hindrances I have mentioned, where we have had to seek and delve for materials to build with, and generally to adapt ourselves to circumstances. And this adaptability on the part of the clerk of works must be an important qualification. He should also endeavour to inspire confidence in the foreman of the works and the men under him.

I may be stating only common platitudes, but I feel sure if the capable man follows these suggestions his services will always be sought after even if his hair *has* changed its colour.

I would like to have said something of the attitude of the architect and client towards the clerk of works, but fear I have already trespassed too far upon your valuable space.

ALFRED FINCHAM.

SIR,—This discussion began as a result of a paper published in the *Builder* of January 12, in which the author advocated the employment of quite young men for the duties instead of men of mature age. That notion has, apparently, judging by the correspondence published by you, not been favourably received, and I am also opposed to it. To my mind, the best clerk of works is the man who has been in the past a builder's foreman, and by his upright conduct and general knowledge commands the respect of those with whom he is brought in contact.

The most serious question of all is, I think, one that has not yet been broached, and that is, are there not too many of us trying to get what, after all, is a precarious livelihood as a clerk of works? The building trade, every branch of it, from architecture to hod-carrying, is congested, and on every side can be heard bitter wailings of want of employment, which is likely to get worse instead of better; and it behoves us all to think very seriously, at any rate, of our children, whether the trade is not very seriously overmanned in all branches.

A CLERK OF WORKS.

*** We fear there is no profession or business in this crowded country to which the latter remark would not apply.—ED.

CHARGING FOR SLATE-CUTTING.

SIR,—In reply to your enquirer, "Westmoreland," may I say that during twenty-five years' experience as a quantity and estimating surveyor I have found it customary to charge the labour on each side of a slated dormer when it falls into a roof of ordinary pitch; the labour taken being on ordinary slating as "straight cutting and risk," or "cutting on rake."

The contention will not hold good that, as the slate is halved on splay the two halves can be used, as in nine cases out of ten the slate cannot be so cut as to leave both pieces (as halves of one slate) intact for use, hence the charge for cutting and risk of breakage.

A slater, working by the piece, would expect the builder employing him to pay for such labour, and the builder is justified in charging for the risk of breakage on the cutting.

J. PATCHING CHOATE.

SIR,—Your correspondent "Westmoreland" is quite right in his charge; see the first paragraph under heading of "Slate" in "Laxton's Price-Book"; also see page 395 of "Specifications" for 1906, under head of "Rules of Measurement":—"Cuttings . . . dormer sides . . . skylights and other openings and chimneys . . . the length by 6 in. on each side."

On this basis the writer has measured up many works executed in the country by some of the principal London and country slating firms.

The contention of "Westmoreland's" client cannot be maintained, as waste is unavoidable and extra labour and nails necessary.

Bedford. HENRY G. COLE.

SIR,—In reply to "Westmoreland," it is the usual London practice in measuring slating, where chimneys, skylights, traps, dormers, etc., are deducted from the bulk, to allow for cuttings 6 in. by the length measured around the deduction.

If no deduction is made from the bulk (as in the case of small chimneys, etc.), of course no allowance for cuttings is made.

GEORGE SPENCER,
Quantity Surveyor.

ST. PATRICK'S COLLEGE, ARMAGH.—A new wing has been added to this college. The building is intended to serve the purposes of a study hall and theatre, with dormitory overhead. The cost has been about 3,000*l.* Messrs. M'Adorey, Dundalk, were the contractors, and Messrs. Ashlin & Colman, Dublin, the architects.

ROMAN CATHOLIC CHURCH, WILLINGTON QUAY.—The new Roman Catholic church at Willington Quay, dedicated to Our Lady and St. Aidan, was recently opened. The building has cost about 5,000*l.*, and provides seating-accommodation for 500. The interior consists of a nave 75 ft. by 34 ft., two transepts, two side chapels, and a sanctuary. There are also a priests' sacristy and a working sacristy. The baptistery is placed on the south-east corner of the nave, and a font of Caen stone has been fixed. At the end of the nave there is a choir gallery. The seating and gallery front is of fumed oak, and the open roof of unvarnished pitch pine. The aisles and porch are laid with coloured tiles, and the sanctuary with mosaic flooring. Mr. J. Fleming Davidson, of Willington Quay, was the architect for the church, and the contractors were Messrs. T. R. Bell & Co., North Shields.

The Student's Column.

ELECTRIC LIGHTING AND HEATING.—VII.

Work—Power—Energy—The Conservation of Energy—The Calorie—Thermal-electric Equation—The Kilowatt-hour—Examples—British Thermal Unit—Examples.

IN this chapter we shall give definitions and explain certain physical terms which are in every-day use by electricians, and an accurate knowledge of which is essential to a proper understanding of electrical problems.

Work.—When resistance is overcome *work* is said to be done. In order to measure a physical quantity we must choose a unit in terms of which to measure it. There are two types of units used in practice called gravitational and absolute units respectively. The gravitational unit of work used in this country is the foot-pound, and is the work done in raising a pound weight one foot high. On the Continent the kilogramme-metre is employed, and since a kilogramme is 2·2 lb. and a metre 3·28 ft. nearly, the kilogramme-metre equals 7·38 foot-pounds. As the weight of a mass of any material is different at different parts of the earth's surface, being less at the Equator than at the Poles, and less at the top of a mountain or the bottom of a mine than at the earth's surface, the gravitational units are not necessarily the same at different places. A lump of metal, for instance, weighing 289 lb. at the North Pole would only weigh 288 lb. at the Equator, and thus a foot-pound at the latter place would be about 0·3 per cent. less than at the former. In ordinary mechanical engineering this is of little importance, but when electric currents are measured to an accuracy of about 0·02 per cent., by comparing the attraction between two coils carrying currents with the attraction of the earth on a lump of metal—that is, with its weight, the variation of the value of the earth's attraction at different places has to be taken into account.

The absolute unit of work on the centimetre-gramme-second (C.G.S.) system is the *erg*, and is the work done in overcoming a *dyne* through a centimetre. A dyne is defined as the force which, acting on the mass of one gramme for one second would give it a velocity of one centimetre per second. It is roughly equal to the millionth part of a kilogramme, and is therefore a very small unit of force. The erg is consequently a very small unit of work. In practice a larger unit called the joule is generally employed, a joule being equal to ten million ergs. The joule is equal to 0·738, or roughly, three-quarters of a foot-pound.

Power.—It has to be carefully noticed that in the above definition of work no mention is made of the time taken to do the work. The work represented by a foot-ton is the same whether the work be done in a second or an hour, but the *power* of the agent doing the work is very different in the two cases. In the *Principia* Newton defines power as the *actio agentis*. The power of an agent is measured by the rate at which it can do work. If it is working at the rate of 33,000 foot-pounds of work per minute it is said to be working at one horse-power. An engine of one horse-power will therefore do 33,000/60, that is, 550 foot-pounds of work per second, or 33,000 × 60, that is, 1,980,000 foot-pounds of work per hour.

One horse-power was originally chosen, so that it should represent the average rate at which a horse can work. As a matter of fact, however, a horse can work at a much higher rate than this for a short time. For example, the power exerted by a horse in starting a cart or pulling it up a hill is much greater than "one horse-power." In the early days of electric traction electricians used motors far too small for the work they had to perform owing to erroneous ideas about the power exerted by horses in starting vehicles. The "*cheval-vapeur*," the unit of power adopted by French engineers, is about one per cent. smaller than the horse-power. It is defined as 75 kilogramme-metres per second. Another unit which will probably soon be generally adopted is the "*poncelet*," which is the power of an agent which does 100 kilogramme-metres (738 foot-pounds) per second.

The absolute unit of power is the watt, which equals one joule per second. It can also be defined as the rate of working of a current of one ampere flowing under an electro-motive force of one volt. A kilowatt is a thousand watts. The connexion between kilowatts, watts, and horse-power is given by 1 kilowatt = 1·34 horse-power = 1,000 watts, and 1 horse-power = 0·746 kilowatts = 746 watts. The *poncelet* is practically equal to the kilowatt, and this is the reason why many continental engineers are anxious to adopt it as the unit of power. The author thinks it would be advantageous to abolish the "horse-power" altogether, and simply use the kilowatt to measure power, whether electrical or mechanical. Amongst electrical engineers this is practically always done.

Energy.—The *energy* of a body is defined to be its capacity for doing work. It may be subdivided into two forms of energy, kinetic and potential. The potential energy of a body is the energy it possesses in virtue of its position or configuration. As examples of potential energy, we may give a railway truck on the top of an incline, the weight of a clock when wound up, or a bent spring. The kinetic energy of a body is the energy it possesses in virtue of its motion. A moving cannon-ball, for instance, or a rotating fly-wheel are examples of bodies possessing kinetic energy. Energy is measured either in ergs or in foot-pounds.

It can be shown that if m be the mass of a body in pounds and v its velocity in feet per second, its kinetic energy is $mv^2/(2g)$ foot-pounds where g is the acceleration produced by gravity in the place where the foot-pound is measured. In London g is very nearly equal to 32·2. For example, if the mass m were 32·2 lb. and the velocity 100 ft. per second, the kinetic energy would equal $32·2(100)^2/(2 \times 32·2) = 5{,}000$ foot-pounds. In order to stop this moving body we should therefore have to expend more than two foot-tons of energy.

If m be in grammes and v in centimetres per second, the kinetic energy would equal $mv^2/2$ ergs. If m be in kilogrammes and v in metres per second, the kinetic energy equals $mv^2/2$ joules. Let us suppose that m is 20 kilogrammes and v is 10 metres per second, then the kinetic energy equals 1,000 joules. Hence, if it were stopped in one second, the average rate of working would be a kilowatt, but if it were stopped in the thousandth part of a second the average rate of working during that time would be 1,000 kilowatts. Newton called the expression mv^2, the *vis viva* of a body, and this term still survives in advanced treatises in dynamics, although, happily, in everyday work it has become obsolete.

The Conservation of Energy.—In Newton's time and for long afterwards the work done against friction was considered to be absolutely lost. Joule proved that it was always in exact proportion to the quantity of heat generated, and found in this manner the mechanical equivalent of heat. This is a particular case of the principle of the conservation of energy. It is now practically universally accepted as a physical axiom that energy is indestructible. If we isolate any portion of the physical universe so that no energy can be radiated from or received by this portion, then the sum of the kinetic and potential energies of all the molecules inside it is absolutely constant. No physical discovery or observation has so far contradicted this theorem. Lord Kelvin deduces from it the principle of the "degradation of energy," namely the tendency to a more uniform distribution of the energy of a system. If the Solar system, for example, continue long enough under existing laws, then the ultimate result will be the falling of the planets and the sun together into one mass which, although rotating for a time, must ultimately come to rest relatively to the surrounding medium.

As another example, let us take the case of electric lamps burning in a house. The electric current supplies power to them which is radiated as heat and light. This current makes the dynamo at the central station more difficult to turn, and so the engine or turbine has to take more steam from the boiler, cooling it, and consequently increasing the consumption of coal in the furnace. All the heat developed by the coal on combustion originally came from the sun, having been stored up many ages ago. Part of this heat is converted first into mechanical, then into electrical, and, finally, into the energy which the lamp radiates as light and heat.

The Calorie.—The unit quantity adopted for the measurement of heat by scientists is the heat required to raise one gramme of water from 9·5 to 10·5° C., and is called the calorie. Since heat is a form of energy, the calorie can be conveniently measured in joules. The latest determinations make 4·2 joules equal to the mechanical equivalent of a calorie. It follows that one joule = 0·238 calories.

Thermal-electric Equation.—We have already seen that the power expended per second by a current of C amperes flowing under a pressure of E volts is CE joules. Hence the power expended in t seconds is CEt joules, and as this is represented by the heat (H calories) generated, we have

$$4·2\ H = CEt = C^2\ Rt = (E^2/R)\ t,$$

where R = E/C = the resistance of the circuit. The following examples are illustrations of this fundamental equation.

Let us take the case of a copper wire weighing 100 grammes and having a resistance of 20 ohms. When a current of 5 amperes is passing through it the power expended in heating the wire will be 20×5^2 that is, 500 watts, which equals 119 calories per second. Since the heat required to raise a gramme of copper 1°C. is only 0·095 times that required to raise a gramme of water 1°C. (the calorie), we see that 9·5 calories would heat 100 grammes of copper 1°C. Until the temperature of the wire gets high we may assume that the heat lost by radiation is negligible. Hence the wire will heat 119/9·5, that is, 12·5°C. per second.

Let us also consider the case of a carbon filament lamp producing 16 candles at a pressure of 200 volts and taking a current of 0·3 of an ampere. The energy expended in the lamp is 0·3 × 200, that is, 60 watts. The mechanical equivalent of the heat generated in it per second is 60 × 0·238 = 14·28 calories, and since the temperature of the filament has become stationary (about 1850°C.) this amount of heat must be radiated from the filament per second. If the lamp were immersed in a kilogramme (2·2 lb.) of water, the water would be heated about 0·014 of a degree centigrade per second. If the initial temperature of the water were 2°C. it would take 7,000 seconds, or about two hours until the water boils. Remembering that we require 537 calories to convert one gramme of water at 100°C. into steam at the same temperature, we see that it would require about ten hours more until all the water had boiled away. Remembering that a kilogramme of water in a beaker could be brought to boiling-point in less than half an hour by the flame from an ordinary candle, we see that much more heat is radiated by the candle than by the lamp.

The Kilowatt-hour.—The unit chosen to measure electrical energy is the work done by a thousand watts in an hour, and this quantity of work is called a kilowatt-hour, or, more commonly in this country, a Board of Trade unit. A Board of Trade unit = 1,000 watt-hours = 1·34 horse-power hours. Hence, if an electrical company charge 3d. per unit, we get 1·34 horse-power for an hour for 3d., or 2·68 horse-power for half an hour. Practically all this power can be utilised for heating, but if we use it for driving machinery by means of a motor 10 or 20 per cent. of it will be lost in heating the motor. In order to accustom the beginner to electric lighting arithmetic, we shall now work out a few practical examples.

Examples.—(1) A gas-burner taking 3·5 cubic ft. of gas per hour gives the same light as an electric lamp taking 0·3 of an ampere at a pressure of 200 volts; if gas cost 2s. 9d. per 1,000 cubic ft. and the electric light 4d. per unit, compare the relative cost of the two systems of illumination.

In a thousand hours the gas meter will have registered 3·5 × 1,000 cubic ft. of gas, and hence the meter bill for the gas-burner will be 3·5 × 2s. 9d., that is, 9s. 7·5d. In the same time the electric lamp will have consumed 0·3 × 200 × 1,000 watt-hours, that is, 60 Board of Trade units. Hence the meter bill for the electric lamp will be 60 × 4d., that is, 1*l*. As the cost of an electric lamp is only about 5 per cent. of the cost of the current it consumes during its life, we may neglect the cost of the lamps in making a rough comparison. Hence the

cost of the electric light on the given assumptions will be more than double the cost of gas lighting.

In a good many towns in this country the charge for the electric light is on the "maximum demand" system. On this system the maximum demand indicator records the greatest current that the consumer has taken during the month or quarter. This instrument is purposely made to record very slowly. It will only give its maximum reading after the current has been flowing for half an hour, and hence it does not record "short circuits" or the current taken by a large number of lamps switched on together for a few minutes only. The meter bill is made up in the following way :—

Let us suppose that the maximum demand has been 5 amperes, the pressure of supply 200 volts, and that the meter reading for the quarter is 212 units. Let us also suppose that a charge of 7d. per unit for the first hour is made, and 1d. per unit afterwards. Then taking the quarter as 91 days, we see that one hour per day at the maximum rate will amount to 5 × 200 × 91 watt-hours, that is, 91 units. Hence, of the 212 units consumed 91 will be charged at 7d., and 121 at 1d. The bill for current consumed will therefore be 3*l.* 3s. 2d. Hence the average price per unit will be about 3·5d. If the maximum demand indicator had recorded 11·7 amperes or more, the full price of 7d. per unit would be charged, while if it only recorded 1 ampere the average price per unit would be about 1·5d.

It is to be noticed that after the demand for the first hour has been exceeded the charge for electricity is very small. It is sometimes objected to this method that it merely encourages the consumer to be extravagant. It might be urged, however, with greater reason that it encourages the thrifty consumer to have recourse to strict rules for the times of lighting the various rooms of his house, so as to keep down the reading of his demand indicator, and so ensure a large rebate on his electric lighting bills. As he is now a far more profitable client to the supply company he well deserves to get his light at a cheap rate. On the other hand, the consumer who consumes a large amount of current at irregular intervals, for instance, on one day of the week only (provided that day be not Sunday) is an unprofitable burden on the company.

(2) For the illumination of a street 20 arc lamps are required, each taking 15 amperes at 40 volts. If the charge for energy is 2d. per unit, what is the meter bill for 180 nights' illumination averaging 9 hours each?

The energy consumed equals 15 × 40 × 180 × 9 × 20 watt-hours = 972 × 20 Board of Trade units, and thus the cost equals 972/6 = 162*l.*

British Thermal Unit.—The British thermal unit of heat is the heat required to raise one pound of water 1°F. It is, therefore, equal to 252 calories, the mechanical equivalent of which is nearly 780 foot-pounds. By Continental engineers the calorie is often defined as the heat required to raise a *kilogramme* of water 1°C. Hence the

British thermal unit = 0·252 of the engineering calorie.

Since the Board of Trade unit equals 1,000 watt-hours, it is therefore equal to 1,000 × 3,600 joules, or 1,000 × 3,600/(252 × 4·2), that is, 3,400 British thermal units, which also equals 1,889 pound centigrade units.

We see that if we could utilise all the heat expended by the electric current in heating water, then a unit would raise 1·89 gallons of water from freezing to boiling point. We shall see later on that the efficiency of heating appliances is very high, so that little error is made in assuming that their efficiency is one hundred per cent.

Examples.—(1) Give the minimum cost of heating one quart of water 90°C. electricity costing 2d. per unit.

Since a gallon of water weighs 10 lb., a quart weighs 2·5 lb., and the number of pound centigrade units of heat required is 2·5 × 90, that is, 225. Hence the minimum consumption of electricity is 225/1,889 of a unit, and the cost of this is 450/1,889d., that is, 0·24d. nearly. The actual cost would, therefore, be about a farthing.

(2) Calculate the number of B. O. T. units required to raise the temperature of the air in a room 20 × 24 × 18 ft. by 30°C.

The number of cubic feet of air in the room is 20 × 24 × 18, that is, 8,640. Now a cubic foot of air at ordinary pressures and temperature weighs about 1·2 oz. Hence the weight of the air in the room is about 1,040 oz., or about 65 lb. As the air heats up some of it is expelled from the room. Neglecting the correction due to this cause and remembering that the specific heat of air at constant pressure is 0·237, we see that the number of heat units required to heat the air is 0·237 × 65 × 30, that is, 462. Now one B. O. T. unit equals 1,889 thermal units, and hence 462/1,889, or, roughly, quarter of a Board of Trade unit would be required to heat the air of the room alone. In addition, the furniture will require an appreciable fraction of a unit to raise its temperature initially. Ordinary building materials, stone, brick, wood, etc., are very bad conductors of heat, and so the heat required for raising the temperature of the bounding surfaces of the room is small. We shall return to this point under electric heating.

Builders' and Contractors' Column.

The London Master Builders' Association.

The thirty-fifth annual general meeting of the London Master Builders' Association was held on Thursday at Nos. 31 and 32, Bedford-street, Strand, W.C., when the following Report of the Council was read and adopted :—

"The depression in the building trade of London has become more acute than otherwise during the past twelve months, but your Council hopes that the great commercial prosperity of the country (*vide* the Board of Trade reports) will shortly bring about a revival in our industry.

Much as this Association has accomplished and is still doing for the benefit of the trade generally, your Council recognises the necessity of a more thorough organisation of metropolitan employers, and to this end has appointed a strong Organisation Committee, whose duties it will be to formulate schemes and execute such measures as will prove beneficial to the Association.

Members are again urged to take an individual interest in their Association and to increase its membership by every means in their power.

Your Council considered it necessary to revise the Association rules. New rules were accordingly drawn up and approved at a Special General Meeting held on October 18, 1906. The chief alterations are with reference to the classification of members (rule 3) and the increase from eighteen to twenty-four of elected members on the Executive Council (rule 6).

No trade dispute of any importance has occurred during the last year. All differences between employers and workmen have been satisfactorily adjusted by the Conciliation Boards, which have amply justified their existence and shown themselves to be of unquestionable benefit to all parties concerned.

Your Council met the representatives of the N.A.O.P. in conference on April 26, 1906, when both parties signed a new code of working rules, copies of which have been forwarded to the members.

A new code of working rules has been formulated and forwarded to the Amalgamated Society of Mill Sawyers and Wood Cutting Machinists, and members will be advised in due course of the result of the negotiations.

In consequence of the greatly increased influence of organised labour in Parliament, the past year has been a momentous one, so far as labour legislation is concerned. Employers' interests have been most carefully watched and strenuously contended for by your Council, and no effort or expense has been spared to place before the members of both Houses of Parliament the Employers' views upon the drastic measures imposed on the present government by trade unions—notably the Trade Disputes Bill and Workmen's Compensation Bill, the latter of which points to a very material increase to employers' liabilities.

Your Council again takes this opportunity to place on record its high appreciation of the valuable Parliamentary services rendered by the Employers' Parliamentary Council and by Mr. William Shepherd, who is the representative of this Association on that Council.

Your Council has to report that the Home Secretary invited this Association to nominate a representative on the Home Office Building Accidents Committee and that Mr. William Shepherd has kindly consented to act in that capacity.

Attention has been given to the charges for and manner of supply of water for buildings in course of construction.

Your Council is advised that the Appeal and Assessment Committee of the Metropolitan Water Board has this matter under consideration, and that a schedule of charges will be formulated and published in the course of a few months.

As previously reported, a deputation from this Association waited on the Water Board on November 14, 1904, with reference to this question, but the results, as embodied in the Board's Scale of Charges Bill, are so contrary to expectation that your Council decided to lodge a petition against that Bill.

This body, to which the L.M.B.A. is affiliated, has removed its offices from Liverpool to 31 and 32, Bedford-street, Strand, W.C., where members may obtain full information on federation matters from the Secretary, Mr. A. G. White.

The finances of the Association are in a sound condition, and additional investments have been made for the benefit of the reserve fund.

As in former years, the Association accounts have been audited by a firm of chartered accountants.

The Committee appointed to report upon the question of new offices has met frequently and considered a large number of sites and premises, but, up to date, no final decision has been arrived at.

The Association Diary and Handbook has become very popular, and is thought much of by public and corporate bodies and individuals interested in the building trade. . . .

During the past year forty-one Council and Committee Meetings have been held, all of which were well attended by the members of the Council.

The Memorial Committee decided that the amount contributed by the colleagues and friends of the late Colonel Stanley G. Bird be invested for the benefit of the Builders' Benevolent Institution, thus marking for all time the deceased gentleman's memorable association with the building trade. . . ."

Concrete Manufacture.

In reply to some inquiries we have received in regard to the manufacture of various combinations of concrete, the following information may be useful :—

Makers of Machines for Making Concrete Slabs:

Fielding & Platt, Gloucester.
Horsfall Destructor Co., Whitehall-road, Leeds.
Leipziger Cementindustrie Dr. Caspary & Co., Markranstadt, near Leipzig.

English Firms who Make Concrete Brick and Tile Machines:

Concrete Machinery Co., Ltd., 18, Water-street, Liverpool.
Bradley & Craven, Ltd., Wakefield.
J. Hamblet, Eagle Works, West Bromwich.
Wootton Bros., Ltd., Coalville, near Leicester.

American Firms who Make Concrete Machines:

Cottom Artificial Stone and Manufacturing Co., Dayton, O.
Standard Stone Co., 140, Nassau-street, New York City.
Stevens Cast Stone Co., 608, Chamber of Commerce, Chicago, Ill.
Universal Concrete Machine Co., Norfolk, Va.
Waterloo Automatic Stone Machine Co., Waterloo, Ia.
Concrete Construction Co., Steubenville, O.

Plants for making concrete paving blocks with refuse-destructor clinker are in use at the places mentioned below, and no doubt the Borough Engineers would be pleased to give any information necessary :—

Liverpool, Bootle, Birmingham, Leicester, Sheffield, Bristol, Bradford, Cheltenham, Blackburn, Withington, Oldham, Ealing, Walthamstow, Woolwich, Fulham, Islington.

General.

Mr. Edmond Coignet, contractor (Paris), has obtained the contract for the floors, posts, and roofing of a new warehouse, 177, Newgate-street, E.C., of armoured concrete on the Coignet system. The architect for the work is Mr. Henry A. Saul, of London. There will be altogether seven floors, calculated for a super. load varying from 1½ cwt. to 2 cwt. per square foot. The outer walls for the building and foundations are to be made in brickwork. A noticeable feature will be the introduction of some large lintel beams. This building, situated at the corner of Duke's Head-passage and Ivy-lane, Newgate-street, will form a good example of the Coignet system of armoured concrete.

Messrs. Helliwell & Co. (Brighouse and London) have received the contract for the patent roof glazing on their "Perfection" system at Messrs. Humbers' new works, Coventry. They have also received further contracts from Messrs. Vickers, Sons, & Maxim, Ltd., of Barrow; also contracts for the Wilkinson Sword Factory, Acton; Messrs. J. Rhodes & Sons, Ltd., engineers, of Wakefield; National Bank, London; Components, Ltd., Birmingham; palm-house, Williamson Park, Lancaster, etc.

The Mayor and Corporation of Ossett have commissioned a new clock, chimes, and bells from Messrs. W. Potts & Son, Ltd. (Leeds and Newcastle), as a memorial to Alderman J. Ward, ex-Mayor of Ossett. Messrs. Potts, who made the Parish Church clock and chimes over forty years ago at Ossett, are now making a large illuminated clock, with 4 ft. 6-in. dials and bell, for Huddersfield.

Mission-Hall, Woking.—A new mission-hall has been erected for the parish of Christ Church, Woking, to accommodate 250 persons, at a cost of 1,200*l.*, the site included, after designs by Mr. Vivian E. Young.

METROPOLITAN ASYLUMS BOARD.

AT the fortnightly sitting of the above Board on Saturday the following matters were dealt with.

Central Stores.—The Works Committee reported having had the letter of the Local Government Board before them, in which they stated that they would defer approval of the plans for the Central Stores until the question of the provision of a needle-room was decided upon. As some time must necessarily elapse before this matter could be dealt with, and as it was expedient that the erection of the new store buildings should be proceeded with at the earliest possible date, it was agreed to again request the Local Government Board to give their consent to the submitted plans.

Joyce Green Hospital.—The same committee reported having received a memorandum from the Hospitals Committee asking them to arrange for the erection of one block only of the proposed staff cottages at this hospital to be proceeded with at present, and they had accordingly instructed the architects to omit the northern block of eight cottages, which would reduce the cost by 2,000*l.* It was agreed to appoint Messrs. Treadwell & Martin to take out the quantities of the proposed staff cottages and other buildings at Joyce Green Hospital, at a commission of 1½ per cent. on the amount of the accepted tender.

Leavesden Asylum.—It was resolved to make up the roads of the Leavesden Asylum Estate at a cost not to exceed 1,000*l.*

Fire-grates.—In July last the existing old-fashioned grates at Leavesden Asylum were replaced by grates constructed on the modern slow-combustion principle, and the Asylums Committee now reported that in those wards where the alterations have already been carried out to such an extent have the heating capacities been increased that the wire fire-guards protecting the grates now become overheated and are a source of danger to the patients. It was resolved to extend the existing guards by two feet to remedy this.

METROPOLITAN WATER BOARD.

AT the fortnightly meeting of the Metropolitan Water Board the following, amongst other matters, were dealt with.

Walton Reservoirs.—The Works Committee reported that the new reservoirs at Walton were now ready for use, and it was agreed that arrangements should be made for a ceremonial opening by the Chairman on April 13.

Cement.—It was agreed to enter into an arrangement with Messrs. J. Byford & Sons for the supply of such quantities of best English-made Portland cement, to comply with the British standard specification, as may be required by the Board at their various stations during the year ending March 31, 1908, at the price of 27s. a ton, less 2½ per cent. for cash monthly.

Hammersmith, City, and North-East London Railway Bill.—The Parliamentary Committee reported that in reference to the opposition of the Board to this Bill the promoters had intimated that they do not intend to proceed further with the Bill this session.

Fifty Years Ago.

FROM THE *Builder* OF FEBRUARY 21, 1857.

THE QUESTION OF LONDON BRIDGES.

IT appears to be now admitted that three bridges for carriage traffic are urgently required in the distance between Vauxhall and Waterloo bridges. Whether the sites which are contemplated are quite accordant with the views which we expressed, especially as to the site of Westminster Bridge, is not, however, sufficiently clear. Sir Benjamin Hall, in the course of his reply to questions from Mr. Locke and Mr. Williams, on the 9th, informed the House that nothing could be decided upon as to Westminster Bridge till after the designs in the competition for Government offices had been received; but the proceedings of the Government throughout show that their opinion tends to a modification of the present *route* from the Middlesex side. . . .

Regarding other required bridges, it is reported that a bridge from the Horseferry to Lambeth Palace, joined by a road from the Pimlico end of Victoria-street to Millbank, is again under consideration, as also that the Government support the scheme for widening Hungerford Bridge in lieu of the bridge to which we referred as designed some time back, and which was to cross from a point nearly opposite the Horse Guards, with one access to it from Charing Cross. The Hungerford Bridge, or rather, as they are called, the "Charing Cross" Bridge Company, after widening the bridge on the present piers to 48 ft., with the requisite additional chains and strengthening trusses, propose to get their access by removing the market—but the alternative has been considered of forming a curved access from Whitehall, using the present line of Whitehall-place, if we understand the scheme as set forth, by which there would be the disadvantage of an approach with considerable curvature and a steep gradient. On the Lambeth side the proposal is to work in with the line of the street intended by the Metropolitan Board of Works, as well as to furnish an access to the South-Western Railway on arches to its own level. This proposition, however, assumes that the scheme of the Metropolitan Board will be preferred to that of Mr. Pennethorne, whose plan, it should be observed, was made in connexion with the site then proposed for the bridge before referred to, with approaches from Whitehall and Charing Cross.

*** The position of the new Westminster Bridge, at that time commenced, seems to have been considered to depend to some extent on the plans and approaches of the new Government offices. After fifty years, we have still only got the inadequate suspension bridge at Horseferry; and the new bridge so much wanted at Charing Cross, as was evident even then, has dwindled to a footwalk along the side of the railway viaduct. It is slow work.—ED.

Illustrations.

CARLISLE CATHEDRAL IN 1506.

THE house of the Austin Canons at Carlisle was girt around on every side with strong walls of stone, whereof one yet formeth a part of the wall of the city. In the midst stood the cathedral church of Our Lady, which Walter the Priest began to build in the year 1101. In this church our late Sovereign Lord King Henry VIII. founded the college of the Blessed and Undivided Trinity to the intent that the Mass should be offered daily for his soul's health for ever. Of this church the western part was destroyed in the year 1641 in the late civil wars, and there remaineth but a part of the body thereof with the cross aisles and a very fair and stately quire, which was finished in the year 1401 by Wm. Strickland, Bishop of Carlisle, who did also build a belfry of stone over the cross aisle, with a steeple leaded, the which hath since been destroyed. To the south of the quire stood a comely sacristy, and in either aisle of the quire was a fair large window of well-jointed tracery work, very seemly to behold, which said windows did give light unto that part of the quire where the high altar stood.

Nevertheless, some learned ones, desiring to see older windows than these, did lately pull them out and made new ones of another fashion, the which to a plain man seemeth to have been but foolishness.

Upon the south side of the church was a fair cloister, of which but the foundation remaineth, together with the fratry, or refectory, of the brothers upon the southern side, also the walls of the cellars under the east dormitory, and a part of one of the buttresses of the new chapter-house.

The old chapter-house was under that part of the dormitory which was next the church, and, methinks, it served as a porch to the newer and fairer chapter-house in the garden. There yet remain the arches between the cloister and this old chapter-house, but an exceeding great doorway in the Gothick manner hath lately been made in the south cross-aisle of the church, where were the old night stairs which led from the dormitory, so that a man may now say:—"Surely this hath never been an house of Austin Canons, for, behold, it is a secular church built in the French fashion."

Upon the west side of the cloister were divers fair and spacious halls for the lodging of strangers, built upon cellars arched with freestone; these were defaced and destroyed by the rebels in the civil wars.

To the south-west of the said cloister was the priors' lodging, with a strong tower of stone, which yet remaineth, and formeth part of the house of the very Reverend the Dean of the College of the Holy Trinity. There were also divers buildings of kitchens, infirmaries, stables, granaries, and the like, which are shown in the prospect printed herewith, and also in a draught plotted by that skilful geographer and navigator, the worthy Master Lysons.

To the east of the cloister was a large and fair garden, full of sweet herbs and well garnished with fish-ponds and other delights, and on the west side of the church was an enclosed courtyard with a gateway of stone, which yet remaineth and formeth the lodging of the verger and doorkeeper of the cathedral church. And it seemeth to me that there was on the north-west side of the church a graveyard for the holy brethren, also without doubt there were in the precincts of the church divers chapels and crosses and sundials and other things pleasant and profitable to look upon, of the which not one stone remaineth standing upon another.

The prospect of this ancient house of religion was made by me, Charles Nicholson, and it was shown to the curious and learned at the general council of the church, which was held in the town of Barrow-in-Furness in the year of grace 1906. C. A. N.

DESIGN FOR A HOTEL FOR A CITY SITE.

THIS design, submitted by Mr. A. J. Pitcher in competition for the Soane Medallion, was one of the two which obtained the recognition of honourable mention and a prize of ten guineas.

It is not our usual practice to publish a design which took a second place in such a competition, where we have not published the prize design. In this case we make an exception because we consider this to be the only design submitted which, in its combination of a good exterior treatment and a well-considered and axial plan, had a real claim to the Soane Medallion. The author unfortunately put himself out of court for the prize by transgressing the conditions laid down in regard to the limits of site; an infringement which he honestly pointed out on his plan, and which was made deliberately in order to obtain what he considered, perhaps rightly, to be an architectural advantage in the treatment of the building. But the rule of adhering to the conditions ought to be as rigidly observed in students' competitions as in competitions for actual building. But for this error of judgment, Mr. Pitcher would undoubtedly have received the prize; and his design being thus technically disqualified, we think the medal ought to have been withheld this year, as no other design showed a satisfactory combination of plan and design, such as we have a right to expect in a Soane Medallion design. For this reason we made no proposal, this year, to publish the winning design.

The general design of the exterior has much merit, though it would have gained by a little more simplicity in some of the detail; and the treatment of the centre portion of the ground plan, with its staircase, hall, lounge, and smoke-room placed on the central axis and separated by *loggie*, has the making of a very fine interior effect. We notice, however, some defects in detail. There appears to be no access to the platform in the large hall except from the floor of the hall, and the space behind the semicircular wall could in that case be of no use except for lumber; the entrances to the ladies' and gentlemen's cloak-rooms on the landing outside the reception-room are rather crudely placed and not sufficiently masked; and in some of the bath-rooms appertaining to the suites of rooms it appears that the water-closet (or rather the seat) is placed openly and visibly in one corner of the large bath-room—a barbarous arrangement which ought never to be tolerated; though we admit that in America, that land of hotel and palatial luxury, it appears to be the practice of the highest class of sanitary firms to arrange matters in this way. We can only say that we think it most objectionable.

The author sends us the following notes on his intention in the design:—

"In the design illustrated an endeavour has been made to treat a commercial subject with a symmetrical plan worked on central lines and a simple, dignified exterior, such as it is thought would be suitable to face a public square in a large city.

The problem was rather a difficult one, firstly, on account of the narrowness of the site, when compared to its length, and, secondly, because no light could be obtained along the eastern side.

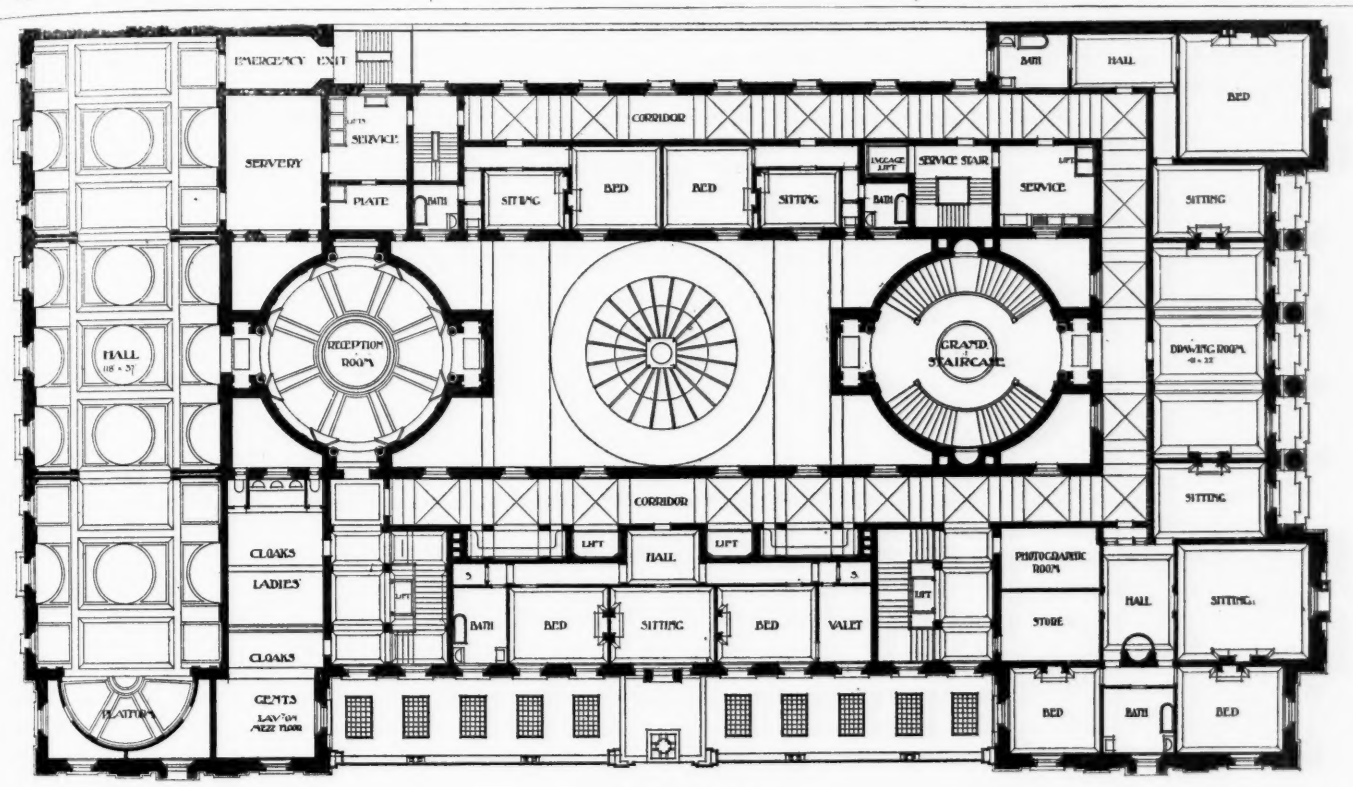
The principal entrance is situated in the centre of the west front, and opens into a spacious vestibule, with the manager's and inquiry offices on either hand, and with lifts, telephones, etc., adjacent. The lounge is entered directly from the vestibule, and to the south of the same is the grand staircase, circular on plan, while a similar position on the north is occupied by the smoking-room. The coffee-room is placed in the southern wing of the building, with the windows overlooking the gardens, which are laid out opposite to the hotel site. The northern wing has been set aside for the buffet, grill, and billiard-rooms, while along the eastern side is a large area, from which all the lavatories are lighted, and it would also afford light and air to the kitchens, etc., in the basement. The ballroom is on the first floor, and the reception-room to it is reached by a separate stair for the use of non-residents, and by connecting doors to the hotel corridor for the convenience of residents.

The windows to the bedrooms, etc., in the eastern wing are facing the internal court, in order that the gardens to the adjoining houses should not be overlooked from them.

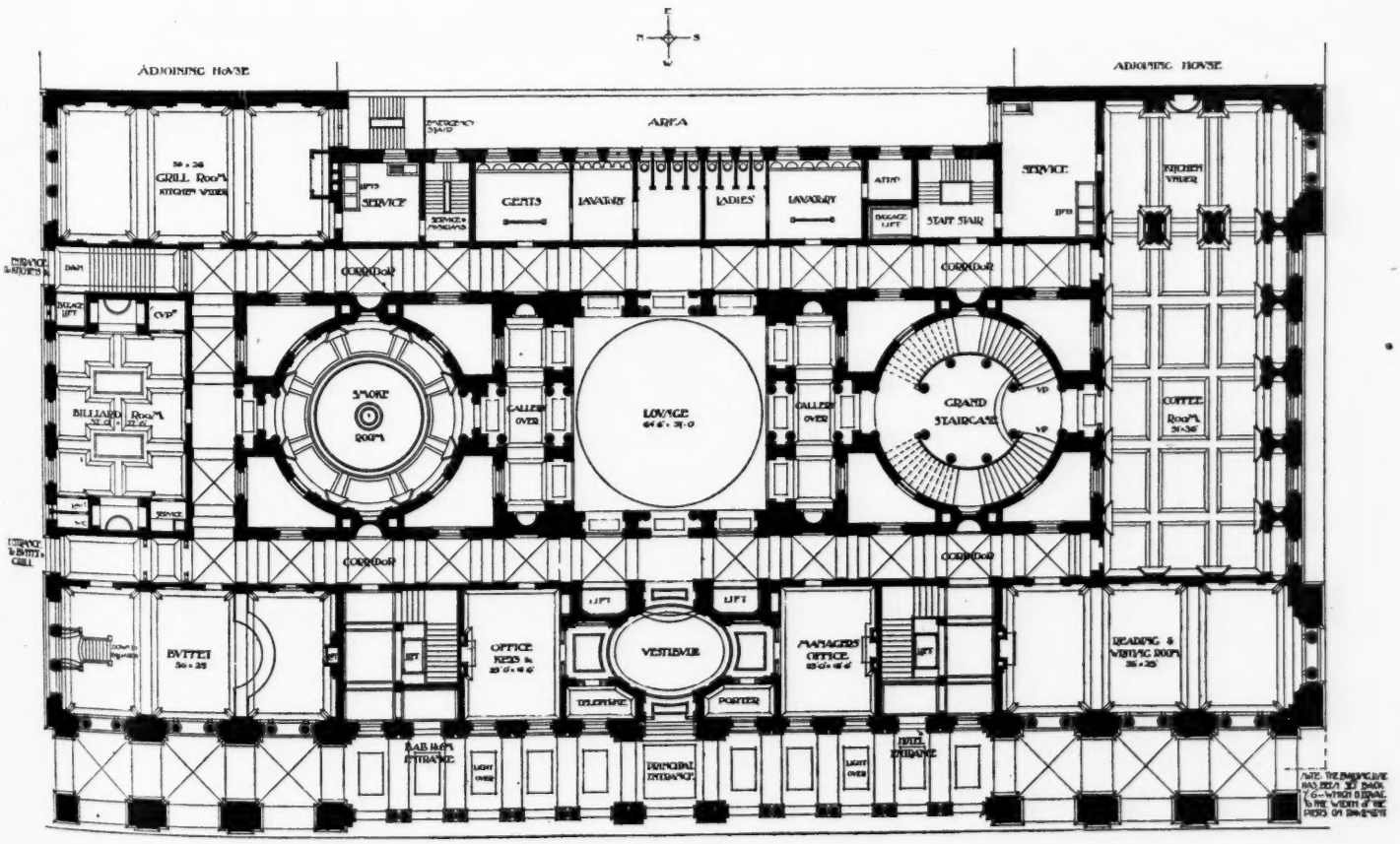
A feature in this design is the loggia, placed along the western front, and through which the various entrances are reached. The intention was to form a permanent covered way, which should be included in the general scheme of the design for the building, and take the place of the unsightly glass erections so often to be found in this type of building. To do this it was thought advisable to project over the pavement and to set back the main building line a distance equal to that occupied by the piers, etc., thus leaving the width of the roadway and the pavement unaltered.

The plan would allow of good architectural treatment internally, some idea of the character of which may be gained from the longitudinal section.

Externally, the building is designed in a simple, dignified type of the Renaissance, and is surmounted by an unbroken cornice to the



FIRST FLOOR PLAN

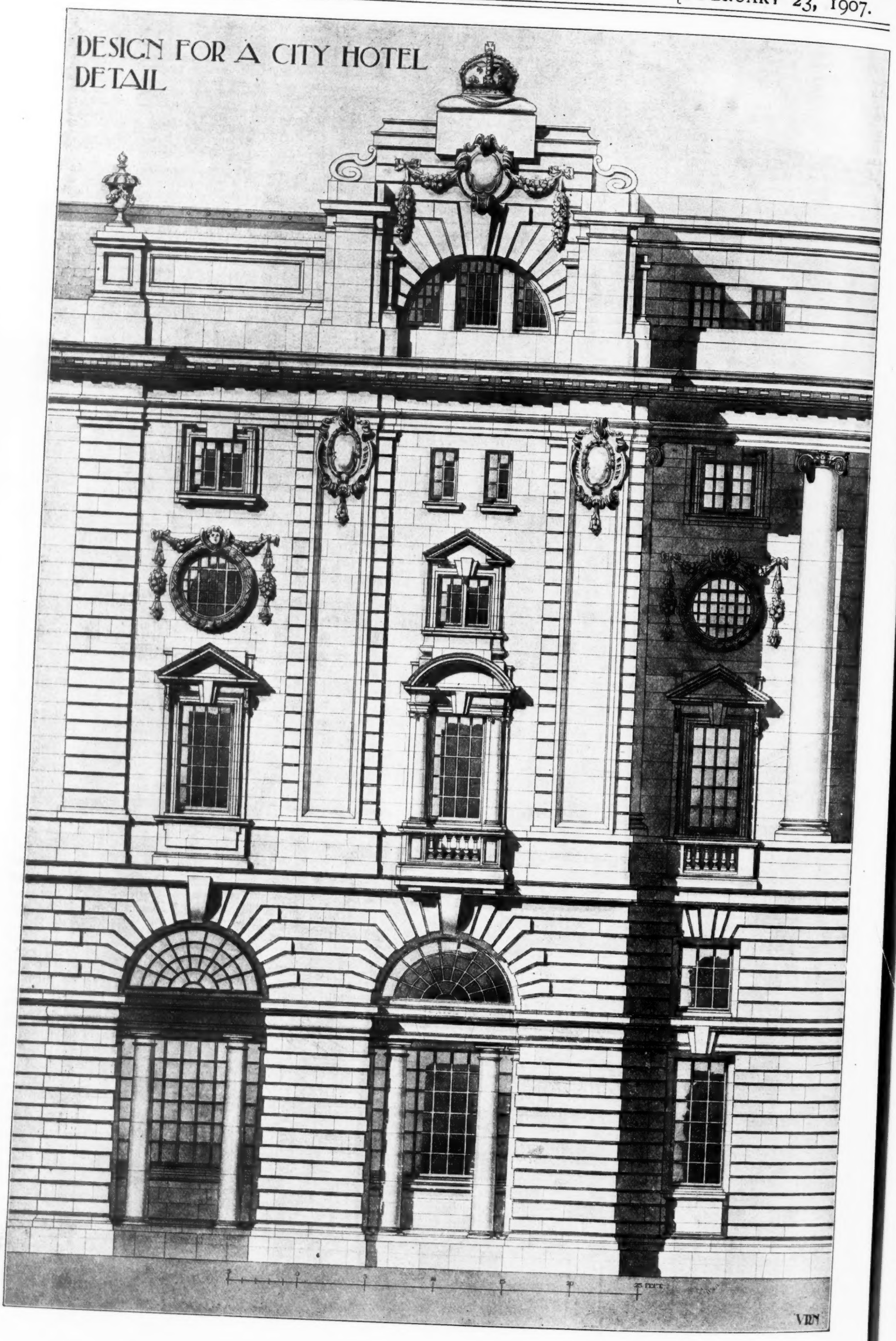


GROUND PLAN

SCALE OF FEET

Design for a City Hotel. Plans.

DESIGN FOR A CITY HOTEL
DETAIL



three elevations, and with a colonnade along the chief or south front, enclosing a balcony to the drawing-room on the first floor.l The general height of the building has been kept as low as possible, on account of the narrow roads adjoining.

The materials intended are Portland stone for the walls and Westmorland green slates for the pitched roofs."

Obituary.

Mr. J. N. HORSFIELD.—We regret to record the death of Mr. John Nixon Horsfield, which occurred at the age of 48, at his residence, Summit Cottage, St. Mark's Hill, Surbiton, on February 10. Mr. J. N. Horsfield was educated at Owens College, Manchester, and was articled to an engineer and architect of that city. As a boy he was gifted with a taste for drawing, and exhibited pictures for several years at the Royal Institution, Manchester. In connexion with the Manchester Architectural Association he frequently carried off prizes, and eventually gained a travelling studentship under the presidency of the late Alfred Waterhouse, R.A., which enabled him to study in Rome, Venice, and the principal cities of Europe. At the age of 21 he came to London to manage and develop estates at Long Ditton and Branksome Park, Bournemouth, as well as city properties. In 1881 he married Frances, daughter of the late Mr. Thomas Wesley. In November, 1896, Mr. Horsfield was elected a member of the Kingston Corporation. For about ten years, up to the time of his death, Mr. Horsfield held the appointment of District Surveyor under the Hampton Wick District Council. In the spring of 1905 the deceased built from his own design Summit Cottage, facing St. Mark's Church, where he took up his residence with his family. He enjoyed an extensive private practice, into which he had taken his two sons as partners, the office of the firm being at Westminster. The deceased accomplished a large amount of work in Surbiton, Kingston-on-Thames, Bushey, Pinner, Northwood, Bournemouth, etc. The deceased was a Fellow of the Royal Institute of British Architects, Fellow of the Surveyors' Institution, member of the Incorporated Association of Municipal and County Engineers, and quite recently he had conferred upon him the honour of honorary corresponding member of the Royal Society of Portuguese Architects. Deceased leaves a widow and two sons.

MR. LARGE.—The death is announced of Mr. William Alfred Large, District Surveyor for the district of St. George, Hanover-square, Belgrave, and Pimlico. Mr. Large was elected a Fellow of the Royal Institute of British Architects in June, 1904. He was the architect of several buildings in South and South-West London, including houses and shops in Buckingham Palace-road for the Grosvenor Hotel Company, and warehouses on the site of Nos. 199-203 for Messrs. Humphreys, Ltd., and of shops and residential flats in High-street, Peckham, S.E.

General Building News.

NEW CHURCH, BARRY.—The foundation-stone of the new Church of All Saints, Barry, was laid on the 6th inst. The building is in the Early English style, and consists of a nave 72 ft. long by 29 ft. wide; north and south aisles 69 ft. long by 11 ft. 6 in. wide; a chancel, divided from the nave by a chancel arch, 36 ft. 5 in. by 25 ft., with choir and clergy vestry on the south side, with organ loft over the choir vestry, and a tower on the north side with ambulatory from chancel. The tower doorway forms the eastern entrance, and there is also a porch on the north side of the building, near the west front. The tower will rise to a height of 78 ft., with an oak shingle-covered spire of 39 ft., and the total height to vane will be 117 ft. The nave is divided from the aisles by an arcade of five arches, supported on circular columns with richly-moulded caps. It is surmounted with a clearstory, pierced with lancet windows. The roofs are to be open to the apex, with curved principals, and cusped windbraces between the principals of nave, and the chancel roof will have a polygonal panelled ceiling with moulded ribs, at the intersections of which there will be carved bosses. There will be a five-light traceried window in the chancel, and the west front will have a three-light traceried window. The church when completed will seat 569 people, and will cost 7,000*l*. The architect is Mr. Bruce Vaughan, and the contractor Mr. H. S. Rendell, Barry.

NEW CHURCH, HORNSEY.—The first portion of the new Church of St. George, Priory-road, Hornsey, was consecrated by the Bishop of London on the 2nd inst. It consists of nave, 81 ft. by 27 ft., and aisles, 12 ft. wide, with gabled transepts projecting beyond. The arcade pillars and arches and the chancel arch are richly moulded, and are built of yellow-tinted free-stone from the Cotswold Hills. The walls are faced both inside and outside with red brick. The roofs are open timbered of pitch pine, boarded and panelled inside, and are covered with red, hand-made tiles from Ashford, Kent. A bell-turret of teak, covered with oak shingles, surmounts the nave roof. The west front has triple windows of two lights each, with tracery heads; the transepts and aisles have three-light traceried windows of Weldon stone, with connecting bands of similar stone to relieve the red brickwork. The doorways to aisles and transept are of moulded bricks, with stone tracery spandrels over the west doors. The church is warmed by hot-water radiators, set in the aisle window recesses, and is lighted by electricity. The architect was Mr. J. S. Alder, and the builders were Messrs. Miskin & Sons. Accommodation is provided for 500 people, and when the church is finally completed it will hold half as many more. The cost to date has been about 8,000*l*.

CONSETT BAPTIST CHURCH AND SCHOOLS.—The Baptist Church at Consett, co. Durham, was opened on the 6th inst. It is designed in a late period of Gothic faced with pressed red bricks with white dressings. The church, with tower and quaint spirelet and vestries, seating about 450 persons, has been erected by Messrs. J. Guthrie & Son, of Darlington, and Messrs. George Baines & Son, Clement's-inn, Strand, London, W.C., are the architects. Schools are to be erected later.

CHURCH RESTORATION, GREAT BRICETT.—The reopening of Great Bricett Church, which has undergone during the past few months considerable restoration, took place a short time ago. The church was examined by Mr. E. Sedding, architect, of London and Plymouth, and he reported on the work required to be done, the cost of which he estimated at 500*l*. The XVth century roof has been entirely repaired in oak, care having been taken to retain every piece of the old timber work, and the best of the old tiles have been used. The tops of the walls have been strengthened, and the floors have been entirely taken up, the vaults filled in, and the whole area covered with concrete. The old paving-tiles have been taken up, and reset. The floors under the seats, which were quite rotten, have been taken up and replaced with wood blocks. During the work there was found in the west walls a Norman arch, which was opened out. The remains of the old painted glass from the original east window of the church, which had been placed in one of the south windows of the nave, has been taken out and reset, and there has been a new bell-cot placed over the west wall. The builder's work has been carried out by Mr. Castle, of Bildeston. A new organ has been supplied by Messrs. R. Watson & Co., London.

GRAMMAR SCHOOL, BINGLEY.—On the 11th inst. the formal opening took place, by the Right Hon. A. H. D. Acland, of the new Grammar School for boys which has been erected at Bingley. The new building closely adjoins the existing school, and advantage has been taken of this fact to provide that part of the provision in the new school—the art-room and the chemical and physical laboratory—shall be used by the girls as well as the boys. On the ground floor a schoolroom, 52 ft. by 24 ft., with three classrooms, a master's room, cloak-rooms, etc., are provided. On the first floor are the art-room, the chemical and physical laboratory, a lecture-room, and other class-rooms, and above a room has been provided with benches and the necessary tools for joinery work for the boys. The cost is roughly estimated at about 4,000*l*. Mr. W. R. Nunns, architect, Bingley, prepared the plans.

SECONDARY SCHOOLS, ST. AUSTELL.—On the 14th inst. the foundation-stones of the new secondary schools which are being provided by the county council at St. Austell were laid. The building is estimated to cost 5,100*l*., including the site, and will accommodate 200 pupils. Mr. B. A. Andrew is the architect for the work.

SECONDARY SCHOOL, BARNSLEY.—It has been decided to erect a new Girls' Secondary School in Huddersfield-road, Barnsley, at an estimated cost of 14,750*l*. The plans are those of Messrs. Buckland, Haywood-Farmer, & Ashford, of Birmingham, who were awarded the first premium of 100*l*. in the competition, and the school will provide accommodation for 400 girls, and fifty children, who will be accommodated in the kindergarten department.

NEW TECHNICAL INSTITUTE, DUNDEE.—The plans for the new Dundee Technical Institute have now been approved. They have been prepared by Mr. Robert Gibson, C.E. and architect, Dundee. The scheme generally is to be carried out to his plans and under his supervision, but in response to a strong desire that the important front façade should afford an object for local artistic effort the Institute Committee are arranging to invite competitive designs from local architects. The scheme will consist of two quadrangular blocks. Round the front or smaller quadrangle, which will be wider than the Nethergate, are grouped the front or administrative buildings, containing offices, students' library, examination hall, and various general lecture rooms, etc.; to the west the architectural wing will be situated; while mechanical and electrical engineering and other allied trades will be accommodated, with laboratories and workshops, on the north and east sides. This quadrangle, as planned, will be of three stories, with high ceilings, and will be taken in hand and completed forthwith. The art department, with its allied art craft and technical adjuncts, will have not less than 7,000 sup. ft. allocated to it. In the larger quadrangle at the back the entire north side will be ultimately devoted to the textile department, and here at present its most pressing needs will be met. On the east side the power block will be also at present built, containing the boilers and engines for the heating and power necessary for the school, as well as for educational purposes. The west side and a portion of the south side will be available for technological purposes.

ST. JOHN'S INSTITUTE, WESTMINSTER.—An institute for the workers in the parish of St. John the Evangelist was opened a few days ago. It has been erected at a cost of some 7,000*l*., subscribed by the Duke of Westminster and others, upon a site in Tufton-street, granted by the Ecclesiastical Commissioners. The buildings, planned and designed by Mr. E. Lutyens, comprise a central hall, somewhat after the basilica manner, rooms for the youths' institute, girls' clubrooms, billiard-room, etc.

EXTENSIONS TO THE GLASGOW UNIVERSITY.—The additions which are now being made to this University, consisting of two suites of buildings within the grounds at Gilmorehill, will be opened sometime in April. The site for the medical building is on the south side of the main road which extends from the front of the University buildings to the western infirmary. The plan is arranged with its main axis running east and west, and the disposition of the various wings or blocks has been arranged so that there is no overshadowing of the laboratories or class-rooms. The physiology department occupies the lower ground floor and part of the upper ground floor in the west half of the building, while the other two departments are located in the east and south blocks. The lecture-theatre for the physiological department is at the extreme west end of the building, while the theatres of the other two departments are at the extreme east end. Each of the three departments has its own entrance, and is self-contained. The natural philosophy building is three stories in height; the lower or basement plan has its windows entirely above ground-line, only a portion of the story being sunk below ground-line. A lecture-theatre, general laboratory, electricity, chemical, physics, heat, and other laboratories are included in the equipment. The plans for the works were prepared by Mr. James Miller, architect, Glasgow.

ST. DEINIOL'S LIBRARY, HAWARDEN.—A residence for the use of students using the library has been dedicated at Hawarden. The buildings for a warden and eighteen students, and containing a chapel or oratory, were built by Messrs. Parker Brothers, of Chester, at a cost of 10,000*l*., after the designs of Messrs. Douglas & Minshull, of Chester. The residence adjoins the library on the east side and overlooks the Dee estuary.

NEW POST OFFICE, KILMARNOCK.—A new post office is being built on a site at the corner of John Finnie-street and Nelson-street, Kilmarnock. The frontage to John Finnie-street is 63 ft. long and that to Nelson-street 87 ft., and the height from the street pavements to the wall-head will average 38 ft. The public entrance door is placed at the corner of the two streets, and the public office will be reached through an oak porch with glazed double swing doors and mosaic floor. The public office will have a counter 37 ft. long, telegram writing-tables, and all other woodwork in fumed oak, tiled dado on walls, plaster ceiling, and mosaic floor. The outside public posting boxes will be executed in polished granite. The staff, mail, and telegraph boys' entrances will be in Nelson-street. The first-mentioned entrance, besides serving the street floor, will give access to the main staircase, which conducts to all the floors, whilst the other two entrances are mainly for the street floor apartments. The largest apartment on the street floor will be the sorting office, having an open roof with large lantern lights. The walls will be lined with enamelled brick from floor to ceiling. The postmaster's retiring-room, boys' delivery and cycle rooms, chief clerk's room, etc., will occupy the remainder of this floor, while the basement, which is situated under the Nelson-street block, will be used for storage and heating purposes. The first floor will contain telephone room, telegraph instrument room, with postmaster's room, and male and female clerks' retiring-rooms. Instrument-testing and recharging rooms will occupy the greater parts of the second floor, but caretaker's apartments will be also provided on this floor. Provision is made for a staff passenger lift in the well

of the main staircase, and a mail basket and goods lift will run between sorting office and basement stores. The heating will be by hot water on the low-pressure system, with fresh air supplied through radiators, and the illuminant probably electric light. The two street fronts will be faced with polished red freestone. The architect is Mr. W. T. Oldrieve, principal architect to H.M. Office of Works in Scotland, and the total cost is expected to be about 11,000*l*. Mr. William Pollock is at present carrying out the foundations contract, and the tenders for superstructure are being considered. Mr. George Hislop is the clerk of works.

HOSPITAL EXTENSIONS, DERBY.—Plans have been prepared for the enlargement of the Derbyshire Hospital for Women in Bridge-street, Derby. It is estimated that the cost of the improvements will be about 2,000*l*. Messrs. Hunter & Woodhouse, of Derby, are the architects.

FREE LIBRARY, WREXHAM.—Sir Foster H. E. Cunliffe, Bart., recently opened a new free library which has been built at Wrexham. The building has been erected by Mr. R. Rowley, of Gresford, Mr. Vernon Hodge, of Teddington, being the architect, his design being placed first by Mr. W. E. Willink, of Liverpool, out of over 100 competitive plans.

Sanitary and Engineering News.

HEYSHAM HARBOUR.—The Midland Railway Company have decided to seek for powers to construct two jetties, to be 265 yds. and 450 yds. long respectively, at the entrance to the harbour for their traffic to and from the Isle of Man and Ireland, in order to avoid the current expense of dredging the channel from the docks. It is estimated that the maritime works at Heysham will necessitate for their completion an outlay of about one million sterling.

GOOLE TO SELBY RAILWAY.—The North-Eastern Railway Company have framed a scheme for constructing a double line from Goole, passing through Rawcliffe on the Aire, and thence in a north-westward direction to Drax and Barlow and so to Selby. Bridges will be built over the Hull and Barnsley line at Drax, and over the York and Doncaster line near Selby. For crossing the river Aire, between Rawcliffe and Newland, a steel girder bridge, after an improved truss pattern, and 200 ft. in length, will be erected.

IMPROVEMENTS ON THE GREAT WESTERN RAILWAY.—The Great Western Railway Company will shortly replace the present drawbridge which spans the River Towy to the west of Carmarthen Junction by a modern bridge. The cost of the undertaking may involve an expenditure of about 100,000*l*. Mr. W. T. Dunsdon, Neath, the company's engineer, is in charge of the new works. New sheds for cleaning and repairing engines have been erected at Carmarthen at a cost of over 10,000*l*. The new premises comprise a cleaning shop which is 183 ft. long by 96 ft. wide. Six roadways run into this shed, which is capable of accommodating sixteen of the largest express engines, or about thirty-four goods engines. The repairing shop which adjoins is 119 ft. long by 56 ft. wide, and its modern fittings include a travelling crane, with a lifting capacity of thirty tons; four smiths' forges, worked by a steam fan, drilling, and punching machines, lathes, etc. The machinery is driven by a compound-cylinder engine erected in an attached building. The buildings have been erected by Messrs. Pattinson & Sons, Rushington, Lancashire, under the supervision of the company's engineer, Mr. A. C. Cookson, the clerk of the work being Mr. Young.

Foreign.

FRANCE.—The Canal du Nord will shortly be commenced as far as concerns the portion between Arleux and Péronne, and the preliminary expropriation of land has already commenced in the neighbourhood of Noyon.——The Municipality of Grenoble have decided on the creation of a historical and ethnographical museum of Dauphiné, which is to include a section devoted to the architecture of Dauphiné.——The town authorities of Nismes intend to found a museum in which will be collected all the objects—arms, utensils, plans, drawings, pictures, books, furniture, and documents—which relate to the history of Nismes and of Bas-Languedoc.——The fortifications of Rochefort-sur-Mer have been "declassées" and ceded to the town, at a price of 380,000 francs.——The Municipality of Nancy are about to carry out an aqueduct to carry the waters of the Moselle. The cost of the works is estimated at 1,350,000 francs.——An art exhibition is to be held at St. Raphael from March 17 to April 27.——M. Marius Roussel (sculptor) and M. Masson (architect) have been jointly commissioned to carry out the monument which is to be erected at Calais to the memory of Jacquard.——Four art exhibitions are at present open at the Grand Palais in the Champs Elysées: the Salon called "de l'Ecole Française," containing only mediocre works; that of the "Association Professionnelle des Peintres et Sculpteurs," not very interesting, though some of the leading artists are included in it; the exhibition of "Peintres de Paris Moderne," in which the works of M. Luigi Loir are worth attention; and the exhibition of "Femmes Peintres et Sculpteurs," which is certainly improving, though containing too many flower-paintings and still life studies.——The death is announced, at the age of 63, of M. Eugène Calinaud, Honorary Architect to the City of Paris. He was a pupil of Vaudremer, with whom he collaborated in the building of the well-known Church of Saint-Pierre de Montrouge. He obtained the first premium in a competition opened by the Department of Public Instruction with the view of creating a type of school building for adoption; and also the first premium in the competition for the Mairie of Vincennes. He was the architect of some important school establishments in Paris.——The death is also announced of M. Monchablon, the painter, a pupil of Cornu and Gleyre. He obtained the Grand Prix de Rome in 1863, and medals at various Salons. He was the author of some fine portraits, of various decorative works and historical paintings; among the latter may be mentioned "Les Funerailles de Moïse" (Amiens Museum); "Veturie et Coriolan" (Epinal Museum); and the religious paintings in the Churches of St. Nicolas des Champs and Nôtre Dame de la Croix, at Paris.——M. Rodolphe Julian, the painter, and founder of the well-known atelier under his name, has died at the age of 66. He was a pupil of Cogniet and of Cabanel. He painted a number of portraits and *genre* pictures.——M. Charles Louis Maréchal, a member of the Société Centrale des Architectes, is dead, at the age of 82. He was a pupil of Paul Lelong and of Nicolle. He was architect of the Church of St. Eloi, and built many residences in Paris and the provinces.

GERMANY.—The Rhenish Society for the improvement of workmen's dwellings is doing excellent work. In its last annual report it records an increase of 132 over 127 building societies for public utility. It announces the facts that small houses are now being built in large and in moderate sized towns; that there is an increasing demand for them; that workmen endeavour to secure dwellings in small houses, and especially to own them. These building societies, unlike speculation building societies, have no empty houses on their hands. Municipalities aid as far as they can by giving sites, acting as security for the interest on loans, reducing street expenses, removing the tax on sales and facilitating building regulations.——An important building recently erected in Berlin is the Trades University. The designs are by Messrs. Cremer & Wolffenstein, who won the work in a limited competition. The plan, which is excellent, offered a difficulty in that the site included the 600 years' old Chapel of the Holy Ghost, which had to be spared, and which is now used as the Speech Room.——The commercial buildings have also had a remarkable addition to their number in the Refreshment Establishment, Rheingold, built from the design of Professor Schmitz. The façade is ornate, as is usual with such buildings, and the main features consist of five gigantic windows reaching up to the main cornice, flanked on either side by staircase turrets roofed with copper domes.——Another noteworthy addition to the commercial buildings is Jandorf's warehouse, the first ferro-concrete private building in Berlin. It is seven stories in height, has a floor-area of 7,000 square metres, and, with the exception of the façade and courtyard piers, is entirely built of ferro-concrete. It was completed in ten months by the Berlin Building Association.

CAPETOWN.—The new Nurses' Home at the Somerset Hospital, Capetown, the foundation of which was laid by the Prince of Wales in 1901, is now completed; it provides accommodation for sixty nurses, the builders being Messrs. Eddy Brothers, from plans supplied by the Public Works Department.——The Rhodes' Memorial is now well on the road to completion; the working out of the details of the monument is most difficult owing to the nature of the incline of the site, which has to be allowed for in the rising, and naturally very careful measurements are required in the masonry. The calculations are of a most intricate nature, the columns being so arranged as to converge slightly. Every column is, therefore, slightly out of perpendicular, and whilst this is the case the beds have to be strictly horizontal. Since the commencement of the work the Memorial Committee has been pleasantly surprised by the bequest of 10,000*l*. by the late Mr. Alfred Beit.——Tenders will shortly be called for for the Transvaal University College, Plein-square, Johannesburg; this building will cost 80,000*l*.——Plans for 5,120 buildings, valued at 1,162,614*l*., were passed last year, giving accommodation to 11,200 people. The value is less than half that of 1905. The cost of building is estimated to be about 35 per cent. less now than it was four years ago.——The total imports into South Africa of Portland cement during the last year have been approximately 500,000 casks, out of which a little over a quarter have been used in the Transvaal. It seems a pity that the Transvaal should send out of the country for her cement when she has the raw material in large quantities quite close to Johannesburg. Capable engineers who have examined the deposits state that a high-class cement could be manufactured from it quite equal in every respect to the imported article; there is a factory in Daspoort, about three miles outside Pretoria, the first Portland cement factory; it is producing cement which is meeting with approval wherever it is used, but the output of this factory is not equal to the demand of the Transvaal, let alone South Africa.

MEXICO.—On January 23 was formally opened the Tehuantepec Railway, which pursues a winding course of about 190 miles northwards—the direct distance being some 65 miles less—from Salina Cruz on the Pacific to Coaxacoalco on the Bay of Campeachy in the Gulf of Mexico, and thus affords the shortest existing inter-oceanic route, which has already been followed by the American-Hawaiian Steamship Company for their traffic, mostly in sugar, from Hawaii and San Francisco to Philadelphia and New York, in lieu of the route *viâ* the Straits of Magellan. We read in the *Times* that Messrs. S. Pearson & Son, Ltd., were contractors for the harbour works at the two ports, and laid the single track (to be doubled hereafter), having a gauge of 4 ft. 8½ in. across a difficult country, necessitating several steel-built bridges, of which the largest, being 660 ft. in length, consists of five spans across the river Jaltepec át Santa Lucretia, where is a junction with the line to Vera Cruz. There are lattice girder bridges, after the Pratt type, at Tehuantepec, with three spans of 61.24 m., at Maletengo with two spans of 37.03 m., and at Tolosa with three spans of 36.30 m.; the Chacalapa bridge is of plate girders riveted, and has three spans of 23.29 m.; the similar bridge at Sarabia has four spans of 16.38 m., with one span of 36.30 m., lattice girdered. The highest elevation is attained at the Chivela Pass, some 860 ft. above sea-level, where the curvature of the line has a least radius of 80 metres and a highest gradient of 2.07 per cent., the average figures for the entire line being a minimum radius of 150 metres, compensated, for the curves, and a gradient of 1.6 per cent. The adoption of oil-burning locomotives will, it is expected, result in a great economy of fuel, and oil wells have been found in the vicinity.

Miscellaneous.

BALKAN STATES EXHIBITION.—In the course of May—October next an exhibition will be held in the Earl's Court buildings, with the aid of subventions granted by the Bulgarian and Servian Governments, and the Government of Montenegro will also be officially represented. In addition to the usual exhibits some pictorial representations will be displayed of the scenery of the Balkans. The Imperial Court and Royal Galleries at Earl's Court are allotted to Bulgaria, and the Queen's Palace to Servia, for their official exhibits and specimens of native products and industries.

THE EAST END DWELLINGS COMPANY.—In the Report to be submitted to the twenty-fourth ordinary general meeting of the company, to be held on the 18th inst., the following statement occurs, which is of some interest in connexion with the subject of artisans' dwellings:—"In the last report it was stated that instead of block dwellings eleven cottages had been erected on some leasehold land in Bethnal Green. The experiment having proved successful, thirteen more were built in 1906, and were all let as soon as ready. Most of them are specially constructed for the accommodation of two families, and they have proved very popular. Orders were given during the year for building nine more cottages, which are now in a forward state, and will be ready for occupation in the early spring."

LEAD-COVERED STRANDED IRON CABLE.—We have received from Mr. W. Hancock, of 99, Woodland-road, Bristol, a sample of lead-covered iron cable which he has patented. He also sends a favourable report on the cable by Sir Oliver Lodge, who points out that it would be excellent for lightning-conductors. The sample sent us consists apparently of 7/16 iron cable embedded in lead. We have sawn it in two and it is exceedingly difficult to distinguish the iron from the lead; in fact, until we applied a powerful magnet we had our suspicions that it might not be iron. We are not very familiar with the work that has been done in amalga-

mating lead and iron, and so we can only state that this type of cable is entirely new to us. We agree with Sir Oliver Lodge that there must be many uses for iron rope which is so excellently protected from corrosion. We cannot agree, however, that it is an excellent material for lightning-conductors. It seems to us that the first severe flash might possibly melt the lead, leaving the iron core exposed to the weather. The low specific heat and low fusing-point of lead compare unfavourably with copper. But although in our opinion the material is not specially well adapted for lightning-conductors, it can be used for other purposes, and we have pleasure in calling attention to Mr. Hancock's meritorious invention.

NORWICH UNION FIRE OFFICE.—The directors of this Society are taking powers to transact the various classes of contingency business usually undertaken by accident insurance companies, but more especially risks under the Workmen's Compensation Act of last year, including domestic servants, shop and warehouse assistants, clerks, etc.

INTERCEPTING-TRAPS.—Messrs. John Knowles have sent us a small catalogue and two supplementary illustrations of their new "Pull-out" stopper for the sweeping arms of intercepting-traps, etc. The special feature is the simple but ingenious arrangement by which the stopper can be removed by pulling a chain, which is attached to a lever arm on the stopper. The stopper itself is of stoneware and is fitted into the socket of the clearing arm with a bitumen joint of a similar kind to the well-known "Stanford" joint. The invention will certainly be useful.

CHIMNEY COWL.—Mr. Mark Fawcett has sent us a copy of the complete specification of a new cowl, which he has designed and patented for chimneys and ventilating shafts. The lower part of the cowl is a truncated cone, and above this is a circular disc, concave on the upper surface and supported above the cone by means of four uprights, triangular in plan. Judging from the drawing we should say that there is every probability that the cowl will cure a great many smoky chimneys, and the design has at any rate the merit of simplicity.

PROPOSED VICTORIA MEMORIAL, LEITH.—The Leith Town Council have confirmed the grant of a site for the proposed statue of the late Queen Victoria at the foot of Leith Walk. It is stated that Mr. John S. Rhind, sculptor, Edinburgh, had been commissioned to execute the statue, which will be of bronze.

JESMOND PARISH CHURCH, NEWCASTLE-ON-TYNE.—Messrs. Percy Bacon Brothers have just executed the large west end windows in this church, consisting of two three-lights and tracery and a rose window. Two figures are depicted in each of the six lights; along the upper row, reading from left to right, are—S. Paulinus, King Oswald, S. Cuthbert, S. Hilda, Wycliffe, Bishop Butler; while in the lower row across both windows there are—King Edwin, S. Aidan, S. Wilfred, Ven. Bede, Bishop Ridley, and Bishop Lightfoot. Cherubs appear in the tracery openings, as also in the rose window.

GLASGOW CATHEDRAL.—At the meeting of the Glasgow branch of the Scottish Ecclesiological Society on the 19th inst., a paper was read by Dr. John Honeyman, R.S.A., on "The Old Arrangements in the Transept of Glasgow Cathedral," in which he referred more particularly to two blocks of masonry of unequal size in front of the rood screen at either side of the entrance to the choir. These have a series of figures with scrolls on their fronts, and the arms of Archbishop Blackadder on the ends; and Mr. Blore, who restored that part of the cathedral about 1841, seems to have come to the conclusion that they were the altars erected by the Archbishop on the west side of the rood screen. He accordingly finished them off as altars. Since then these have always been spoken of and written about as such. Dr. Honeyman brought forward much evidence to show that they had never been altars, but only the decorated abutments of ribs spanning part of the wide stairs to the crypt, carrying a broad platform or gangway north and south to the galleries over the porches at each end of the transept. It was on this raised platform that the altars erected by Blackadder stood, which, like all others in the church, were destroyed after the Reformation. Dr. Honeyman pointed out that Mr. Blore's mistake was inexcusable, as he had a considerable part of this old structure before him, as shown by Mr. Collie's drawings in 1833 and Billings' views later. Dr. Honeyman pointed out that the clumsy way in which this structure had been stuck on in front of the screen sufficiently proved that the latter was not erected by Blackadder, but was of older date (probably about 1430). He explained that one of the pedestals was larger than the other, because the south aisle of the nave is fully a foot wider than the north aisle, and as the insides of the transept gables are flush with the aisle walls, there is more spaec on the south side of the crossing than on the north side. Attention was also called to the fact that the beautiful little porches at each end of the transept, halfway down to the crypt, have been originally constructed with three bays open towards the centre. The effect of this symmetrical design has been greatly marred by the westmost bay on each side being built up and entirely covered by a clumsy flight of steps going up to the galleries, where they are quite unnecessary, as these are also reached by flights of steps in the aisles. He advised that these should be removed and the porches restored as orgiinally designed.

INTERNATIONAL ART EXHIBITION, VENICE.—The British room of the forthcoming exhibition will be decorated with panels by Mr. Brangwyn, and efforts are being made to fill it with a representative display of pictures by English and Scottish artists and American artists living in London, and a loan collection of portraits painted by Mr. Sargent.

BUILDINGS ON SALISBURY PLAIN.—In the Parliamentary Papers of Friday Capt. Faber asks the Secretary of State for War whether it is contemplated to allow any civilians, contractors or otherwise, to erect permanent buildings on Government land on Salisbury, and whether plans for any such buildings have been deposited at the War Office.—Mr. Haldane, in reply, states that the general question of the advisability of providing buildings of the nature of private residences, shops, stores, etc., at stations such as Tedworth, is now receiving careful consideration.

THE ROYAL SANITARY INSTITUTE.—At an examination in sanitary science as applied to buildings and public works, held in Glasgow on the 8th and 9th inst., Mr. Alexander Simpson Macdonald, Inverness, was the only candidate, and was awarded a certificate. At an examination for Inspectors of Nuisances, held on the same date, seven candidates presented themselves. The following two candidates were certified, as regards their sanitary knowledge, competent to discharge the duties of Inspector of Nuisances under the Public Health Act, 1875:—Miss Annie McKenzie Brown, Gourock, and Miss Alice Maud Lancaster, Blackburn.

NEW BUILDING BY-LAWS AT GORTON.—The Gorton Council are drafting new building by-laws, including one which provides that the yard space at the rear of all new buildings shall be not less than 250 sq. ft.; that all carriageways intended to form the principal approach or means of access to any building shall be cindered, kerbed, etc., and that the inner and outer parts of the exterior walls of all buildings shall be separated by a cavity. They have also passed a resolution approving of the suggestion that the law should be amended to enable local authorities to make by-laws providing for the minimum area for living and bed rooms. Dr. Martin (the Medical Officer) has drawn the attention of the Council to the large number of unpaved back passages in the township, and the Council has requested the Highways Committee to serve notice on the owners of property fronting, joining, or abutting on the passages referred to, requiring them to properly repair them, and, in the event of this notice not being complied with, the Council to execute the work.

ROYAL PHILOSOPHICAL SOCIETY OF GLASGOW.—On the 12th inst. Mr. Stephen Adam, jun., delivered a lecture on "Modern Decorative Glass" to the members of the Architectural Section of the Royal Philosophical Society of Glasgow. The lecturer said that modern taste inclined towards the Mosaic method of treating stained glass, as this brought out the beauties of pure streaky glass and required little and sometimes no painting, thus retaining in a greater degree the translucency of good material. It was asserted by some that painting on glass was seldom permanent, but this could be easily proved a fallacy. When it did occur it was usually traceable to faulty workmanship or inferior pigments. Painted work several centuries old could be seen in perfect condition at present, and it could still be made as permanent. The lecturer showed examples of old and modern work on the screen. A discussion followed, after which Mr. Adam was accorded a vote of thanks.

WIRE SCREENS FOR DOORS.—Messrs. E. T. Burrowes & Co. (Portland, Maine, U.S.A.) have sent us, through their London agent, illustrations and samples of their wire fly screens for door panels and window openings. They are more especially suitable for a hot country, where it is desirable to have free circulation of air and at the same time keep out insects; but we understand that the unusual number of wasps and flies last summer has brought them into some use in England. They are rather small-mesh wire screens of first-rate workmanship, and fastened at the edges of the panels not by tacking but by an edge strip of metal which is doubled into a groove in the stile with a holding-rod screwed down into it by a bead, so that there is the same pull on all the strands. Messrs. Burrowes make doors with these wire panels, to order and to suit the house where they are to be used. Those who want anything of the kind during the English summer will find these screens as well made and durable as anything of the kind can be.

METALLINE.—Messrs. F. de Jong & Co. send us an illustrated catalogue of the architectural ornament which they produce in fibrous plaster (much of it very good), and also description and samples of what seems to be practically a new sort of plaster, which they call "Metalline," and which is recommended as presenting in its texture a perfect imitation of stone. It is so; it might be taken for stone; and though we do not regard the imitation of stone as any merit in itself (especially not with the sham jointing on the specimen of wall covering sent to us), it appears to be a material which can be used decoratively in the same manner that plaster can, with a rougher surface texture and a less crude white than ordinary plaster. In this way, as a substitute for plaster, it may be used with better effect than plaster; but it must not be accepted as a substitute for stone.

THE MUNICIPAL YEAR-BOOK.—The Municipal Year-Book for 1907, which is edited by Mr. R. Donald and published by Edward Lloyd, Ltd., has been thoroughly revised, additions have been made to the various sections, and new information has been introduced. The present edition includes two new sections, one giving statistics with respect to allotments, and the other information in regard to the progress of the motor in the municipal world. A short general review of the work of each local authority is given in alphabetical order, under the name of the city, town, or district, and, wherever possible, the statistical and other information is arranged in a series of sections in tabular form. The first section is devoted to London municipal government (including the County Council, City Corporation, borough councils, Water Board, etc., etc.), after which there are sections dealing with municipal government in England, Wales, and Scotland, and local government in Ireland, including general summaries of the work of the corporations and various district councils. The various forms of municipal enterprise are then dealt with, such as the water, gas, and electricity supply, tramways and telephones, the housing of the working-classes, markets and slaughter-houses, education, libraries, and so forth. The work is very clearly printed, and is concisely arranged, and the information contained in it appears to be thoroughly reliable. It is published at 3s. 6d. net.

DERBY MASTER BUILDERS' ASSOCIATION.—The annual dinner of this Association was held at the St. James's Hotel, on February 7. Mr. R. Weston presided, and Mr. J. H. Walker occupied the Vice-chair. The Midland Federation was represented by Mr. John Dallow, C.C. (President), Mr. F. W. Amphlett (Hon. Sec.), of Birmingham. The Vice-chairman gave "The Mayor, Magistrates, and Corporation," which was acknowledged by Councillors Johnson and Newbold. "The Midland Federation" was proposed by Councillor Dickinson, who spoke of the Socialistic tendencies of the age, and the need of training young builders to put forth their best efforts. Both Mr. Dallas and Mr. Amphlett in their replies referred to the usefulness of the Conciliation Board, and mentioned that at a meeting of masters' and men's representatives held at Derby a dispute at Newark had been satisfactorily settled. Mr. A. Brown gave "The Architects," and Mr. Widdows, in responding, pleaded for a better understanding between architects and builders. Mr. Cossar also returned thanks. "The Derby Master Builders' Association" was proposed by Mr. W. P. Edwards. The President, in responding, pointed out that, although theirs was a competitive business, and most of them were often after the same job, there was every need for unity of effort, not only that they might secure peaceful relations with their employees, but that they might watch the legislative efforts of Parliament, which sometimes, as in the Compensation Act, very closely touched the builders' interests.

"THE BRITISH AND FOREIGN GUIDE TO THE BUILDING TRADES."—We have received the 1907 edition of this work from the publishers, Adolphe Francis, Ltd., Fleet-street, E.C. The various trades are arranged in alphabetical order, including some of the countries and towns of the Continent, America, and the Colonies. The publishers state that "whilst it is impossible to insert every firm of any given trade under the various trade headings, every effort is made to obtain the most important," but we are afraid that many important foreign and colonial firms have been omitted. The book, which is published annually, price 7s. 6d., contains useful information, but it is far from complete.

NOTTINGHAM MASTER BUILDERS' ASSOCIATION.—The annual dinner of the Nottingham Master Builders' Association was held, on the 15th inst., at the George Hotel. The President, Mr. J. W. Woodsend, was in the chair. The toast of "The Mayor and Corporation of Nottingham," coupled with which was the name of the Sheriff, was given by Mr. W. Edgar. In response, the Sheriff congratulated the contractors of Nottingham upon having such an Association. He should say that

in the building trade the percentage of profit obtained on the turn-over of capital was about the smallest percentage of any trade in the country. There were many causes for that, and it was the work of this Association to remove those causes as far as it possibly could. The system of contracting was in a great measure responsible for the condition of things, and he hoped the date would not be far distant when there would be less of the cutting and keen competition than there was at the present time. It was difficult to see how to do away with it, but he thought that by unity and such Associations as theirs that it could be minimised to a very great extent. They were all very sorry the building trade of the town was not brighter, and it was most extraordinary that when the trade of the country was booming in practically every section, the building trade in Nottingham was certainly by no means good. He believed one of the causes was that a good deal of the trade had gone into the suburbs, and the building of factories seemed to to have gone to outside districts, such as Long Eaton, and they in Nottingham were the unfortunate sufferers. He was of opinion that the Corporation did not give quite the encouragement it should to the traders of the city. The "Architects and Surveyors" were toasted by Mr. W. Crane, and, in responding, Mr. W. D. Pratt (one of the representatives of the Architectural Society) also made allusion to the depression in trade. Mr. James Wright proposed "Success to the Builders' Federation." Mr. J. H. Walker (Derby), in replying, said the Federation was a combination of forces which was bound to do very good work. Now the Federation had been formed he believed strikes were a thing of the past. The chief object of the Federation was to avoid strikes, but there were many other matters in which it could be of use and back up any local Association. The health of the visitors was drunk on the proposition of Mr. H. Vickers, Mr. W. E. Starkey (Leicester) replying.

Capital and Labour.

STATE OF THE BUILDING TRADES.—Employment continued dull during January, and was seriously affected by bad weather. Compared with a year ago, no general change was shown by the Returns, but employment was noticeably better with carpenters and joiners and plumbers. Returns received from firms employing 54,011 workpeople at the end of January showed an increase in the number employed of 768, or 1·4 per cent., compared with a month ago. The figures for December, however, were affected to some extent by the Christmas holidays. Employment was dull in all branches of the building trade except plumbing. Compared with the end of December, a slight improvement was shown by carpenters, plumbers, and plasterers, whilst in Scotland a decline was reported by masons and slaters. Compared with a year ago, employment showed an improvement with carpenters, plumbers and slaters, while masons in Scotland reported a decline. Bricklayers and painters reported no general change compared with either a month ago or a year ago. The percentage unemployed of trade union carpenters and joiners in the United Kingdom at the end of January was 8·2, as compared with 8·6 a month ago, and 10·1 a year ago. The percentages unemployed of trade union plumbers for the same periods were 6·7, 7·5, and 12·1 respectively.—*Labour Gazette.*

Legal.

ANCIENT LIGHTS.

IN the Chancery Division, before Mr. Justice Joyce, on Friday last week, the case of Scarlett *v.* The Piccadilly Hotel, Ltd., was mentioned.

Mr. Hughes, K.C., said he had a motion in the action which concerned an obstruction of lights, but in the present not entirely satisfactory condition of the law on that subject he did not propose to trouble his lordship with the matter, but would allow it to stand until the trial of the action. If the Hotel Company went on they must take whatever risks there were.

No order was made on the motion except that the costs should be costs in the action.

CLAIM FOR ARCHITECT'S FEES.

THE case of J. Barker & Co., Ltd. *v.* Payne came before Mr. Justice Phillimore in the King's Bench Division, on the 19th inst., an action by the plaintiffs to recover from the defendant, Mr. Edgar G. Payne, 6A, New Cavendish-street, Portland-place, the price of work and labour done by them as architects, and also for damages for alleged breach of contract whereby the defendant agreed to appoint plaintiffs as architects for the purpose of supervising the pulling down and the erection of buildings on the site of Nos. 125, 127, and 129, Great Portland-street, Nos. 246 to 269, New Cavendish-street, No. 2, Charlotte-street, and stabling in the rear. The defendant paid 169*l.* 19*s.* into Court as being sufficient to meet the plaintiffs' cliam.

His lordship, after hearing the evidence, held that the sum paid into Court was sufficient to satisfy plaintiffs' claim, and entered judgment for the defendant with costs from the date of the payment into Court; the plaintiffs to have the costs up to the time of the payment into Court.

ACTION AGAINST BUILDERS FOR BREACH OF LICENCE.

THE hearing of the case of Mouchel *v.* William Cubitt & Co., concluded in the Chancery Division before Mr. Justice Neville last week, an action by the plaintiff for an injunction to restrain the defendants from committing a breach of clause 12 of a licence.

It appeared that the plaintiff was the sole agent in Great Britain and Ireland of Mr. François Hennebique, the patentee of a certain invention for improvements in building construction known as ferro-concrete. On March 2, 1903, the plaintiff, as such agent, by deed granted to the defendants a licence to use the Hennebique inventions and to construct buildings, etc., in accordance with the patented system of ferro-concrete within the "town of London." Clause 12 of the licence was to the effect that the licensees would not without the consent of the licensor carry out or contract to carry out any ferro-concrete or other similar work which might be an infringement of the patents or be in competition with the same. The plaintiff alleged that the defendants had on certain work they had executed committed a breach of the licence and claimed the injunction in question. The defendants, while admitting that on certain work they were executing for the Whitbread Brewery Company, Ltd., they had done a portion of concrete work on a different system to the Hennebique system, they denied that they had committed any actionable breach of clause 12. They further contended that the clause being wider than was necessary for the plaintiff's protection, was void, and was an undue restraint upon the defendants' trade. The defendants committed the breach for the purpose of testing the validity of the clause, and so informed the plaintiff by letter.

At the conclusion of the arguments of counsel, Mr. Justice Neville, in giving judgment, said he thought that the restraint extended to nothing but what was in competition with the letters patent, and therefore not in excess of what was required for the protection of the covenantee because what the patentee required was protection from competition. He thought, therefore, that the plaintiff was right, and was therefore entitled to an injunction in the terms of clause 12, but limited to the duration of the licence.

Judgment accordingly.

Mr. Upjohn, K.C., and Mr. Newbolt appeared for the plaintiff, and Mr. Astbury, K.C., and Mr. P. Wheeler for the defendants.

THE STRAND BUILDING DISPUTE.

THE case of Draper *v.* Lorden and another came before Mr. Justice Warrington in the Chancery Division on the 13th inst.

Mr. H. Terrell, K.C., and the Hon. M. M. Macnagten, appeared for the plaintiff; and Mr. Astbury, K.C., Mr. Roskill, K.C., and Mr. Cozens-Hardy for the defendants.

Mr. Terrell, in opening the case, said the action was brought by the plaintiff, who was entitled to a leasehold interest in premises, No. 422, Strand, against the defendant, Mr. Lorden, who claimed to be entitled to some interest in the adjoining premises, Nos. 418, 419, 420, and 421, Strand, and also against Messrs. Sabey & Co., who were contractors employed by Mr. Lorden, for an injunction to restrain the defendants from trespassing upon or interfering with the plaintiff's premises, No. 422, Strand, and from excavating any part of the ground within 10 ft. of the wall of the premises or otherwise than in accordance with the provisions of the London Building Act, or in any other respect whereby the premises might be deprived of the support they enjoyed or otherwise damaged or destroyed. There was also a claim for damages. The defendant, Mr. Lorden, was entitled under some kind of building agreement. He had to build, and then he was to get a lease. At No. 422, Strand, the plaintiff for many years past carried on the business of a hatter under the name of Harman. It was a very old-established business, and the plaintiff succeeded to it on the death of his father. The plaintiff held those premises for the residue of a term of twenty-one years from December 25, 1892. The premises were, of course, very important to him for the purposes of his business, but the length of his lease, he having only a term of six or seven years to run, did not permit him to rebuild the premises, or to undertake any building operations there. His business was carried on on the ground floor, the upper floors being let to different tenants, and the rent which the plaintiff paid was 400*l.* a year. In May, 1906, a company called The London and Home Counties Property Company, obtained a building agreement from the freeholders of Nos. 418, 419, 420, and 421, Strand, and having obtained that building agreement they were desirous by reason of the terms of it of pulling down those four houses and rebuilding other houses in their place. Accordingly, on May 3, 1906, plaintiff received by post a party structure notice given pursuant to sect. 90 of the London Building Act. This party structure notice was not signed nor was it dated, did not say by whom it was given, and it did not specify the work which was to be done except saying that the party structure was to be pulled down and repaired where it was found to be defective or out of repair and where found necessary or desirable. He doubted whether that was a good party structure notice under the Act. It appeared now by the correspondence that just at that time the Home Counties Company had parted with their interest under the building agreement to the defendant, Mr. Lorden, who was a builder. Mr. Lorden had appointed Messrs. Crickmay & Sons to be his surveyors. The next thing that happened was that Mr. Arthur, the plaintiff's solicitor, was served by Messrs. Crickmay with another party wall notice dated July 14, and addressed to the freeholders of No. 422, Strand. The notice required the plaintiff to underpin the said wall if found necessary "to thickness out" the said wall, to cut into the wall for bonding, and to take down and rebuild the said wall should it be necessary. He did not think anything material would turn on that notice because what happened was that they did not proceed under it. What defendants apparently said to themselves was, "We will not proceed under this notice. These houses are very old—pull one down and the rest of the pack comes down, too." So they proceeded first of all to pull down part of their premises. Then they lodged a complaint with the District Surveyor that the party wall was a dangerous structure, and got him to come in and condemn it. Then they thought they would get the party wall pulled down in that way. That was the scheme, he thought, by which they proceeded. On July 9 the defendants commenced to demolish No. 421, Strand. Prior to that they had commenced to pull down Nos. 418, 419, and 420. On July 14, the same day they had served the party wall notice, they obtained from the District Surveyor his authority to cut away the chimney breasts which were in the party wall. After this there were interviews between Mr. Crickmay, the plaintiff, and Mr. Leeds, the plaintiff's architect, and on July 26 these gentlemen and a Mr. Wiltshire, a surveyor employed on behalf of the plaintiff, discussed the position of affairs. Mr. Wiltshire pointed out to Mr. Crickmay that in his opinion the condition of the party wall was due to the action of the defendants in having commenced to pull down their premises and by removing the support. To that Mr. Crickmay replied, "If that is the line you are going to take we will have the wall condemned." On that day Messrs. Crickmay & Sons addressed to the District Surveyor a notice that the party wall was in a dangerous state and requesting that the same might be dealt with by him in accordance with the statute. On July 26 defendants found it necessary to put up a raking shore against the plaintiff's premises, and on July 28 they put up two raking shores in Bedford-street. On July 16 the District Surveyor came to see the premises and served on the plaintiff a dangerous structure notice requiring him to take down so much of the party wall on the east side of No. 421, Strand, as was cracked, loose, decayed, or otherwise defective, and to secure any other work which was found to be defective. On the same day he also served the defendants with a dangerous structure notice. The writ in the action was issued August 2, and on August 10 plaintiff applied on motion for an *interim* injunction until the trial, and on that motion the defendants gave an undertaking till the trial not to do any act whereby the support then enjoyed by the plaintiff's house was diminished. The plaintiff under the provisions of the Act disputed the dangerous structure notice and the usual process was adopted of a third surveyor being called in to consider the matter. A Mr. Hare was called in, and on August 31 he affirmed the dangerous structure notice. Plaintiff then proceeded to move the Court to set aside that award of Mr. Hare, but in the meantime the local authorities took out a summons before the magistrate for an order compelling plaintiff to do the work. That came before the magistrate at Bow-street on September 25, and he made an order that the work was to be done within twenty-one days. A similar order was also made against the defendants, but, of course, that met their requirements. The plaintiff proceeded to take down his wall so far as it was defective on October 7, and defendants proceeded to take down their building altogether, and so deprive the plaintiff of every bit of support except the shores they had put up. Upon that the plaintiff moved his

lordships to attach Mr. Lorden for breach of the undertaking. That came before him on October 24, and he (counsel) indicated that it was impossible for him to determine the issue of fact on the evidence then before him, and thereupon it was ordered that the motion should stand until the trial. He contended that it was wholly unnecessary for defendants to raise the whole of their building to the ground so as to obey the magistrate's order. Having got the site cleared without the proceedings under the London Building Act, defendants then proceeded with their rebuilding operations, and in digging the foundations for their new building plaintiffs' evidence was that they had dug the foundations very near this old wall, and, in fact, in one place undermined it. Thereupon the plaintiff moved for the second time to attach Mr. Lorden, and that came before his lordship on November 2, and on that occasion Mr. Lorden was ordered to give an undertaking and to pay the costs of the motion. Since then Mr. Lorden had not committed a breach of his undertaking, and the matter now came on for trial.

The defendants by their defence traversed all the statements of the plaintiff, and asserted that the plaintiff never enjoyed any support from No. 421, Strand, or any support by right. They said that the shores were put up under the direction and with the approval of the District Surveyor and the London County Council, and with the permission of the plaintiff. They further said that at the time they began their building operations at No. 421, Strand, the wall separating No. 422 from 421, Strand, was jagged, bulged, and in a dangerous condition. It was also urged that Mr. Lorden, as the building owner, had duly complied with all the provisions of the London Building Act, and that defendants were under no liability in respect of the damage sustained by the plaintiff.

Evidence was then given on behalf of the plaintiff's case.

Mr. Percy Leeds, architect and surveyor, having given evidence in support of the plaintiff's case, in cross-examination by Mr. Astbury said that the house No. 421, Strand, obtained support from the wall of No. 422.

Was the suggestion made at some time during the progress of the work that your client should not pull the party wall right down, but to pull it down to within a certain number of feet of the ground and then to build the upper part new on the top of the old bottom ?

The witness replied that that was considered at the second floor level. He had never said that it was a good, sound wall.

Cross-examination continued,

July 24 was the first time he had had anything to do with the business. He was called in by Mr. Wiltshire, who was an auctioneer, surveyor, and estate agent at Lewisham. Witness knew that the plaintiff had only about six years of his lease to run. Having regard to the terms of plaintiff's lease, he should say that it was worth considerably more than 500*l*.

Do you know that your client suggested 3,000*l*. or 4,000*l*. ?—I do not know.

I want you to tell me this—can you tell his lordship anything which the plaintiff could have done to put difficulties in the way of Mr. Lorden rebuilding his premises which he did not do from the time when you came on the scene ?—I have not considered such a point.

I suggest to you that plaintiff adopted every means he could possibly think of with your assistance and Mr. Wiltshire's to put difficulties in the way of Mr. Lorden's building, to delay the London County Council, and to delay the party wall coming down ?—We were not the cause of the dangerous structure notice.

After you went there on July 24 can you suggest any other means than those the plaintiff adopted that he could have adopted for further delaying Mr. Lorden ?—As far as I can see it was out of his hands.

In further cross-examination the witness said Mr. Hare disagreed with his view, and he affirmed the dangerous structure notice, and the magistrate at Bow-street affirmed Mr. Hare's award. Messrs. Sabey & Co. were the people employed by Mr. Lorden to do the pulling down, and they were quite competent persons for that work. He had never complained to them that they had better exercise a little more care. He thought that he had suggested in one of his affidavits that they had not acted carefully. He should contradict anybody whom the defendants called to say that they had not undermined the party wall.

Re-examined by Mr. Terrell,

If the wall in question had not been disturbed by the defendants' operations in his opinion it would have been there now and for years to come. He had no doubt No. 422 received considerable support from No. 421.

Mr. Henry Moss, examined, said he was foreman of works in the employ of Messrs. Higgs & Hill, and was engaged in the taking down of the wall in question. Although the upper part of the wall where it was exposed to the weather was in a poor state of repair it was a fair wall for an old wall, and would have stood for a good many years.

Cross-examined,

In his opinion the premises, No. 422, Strand, were not in a rotten condition.

At the close of the plaintiff's case the first witness called for the defence was Mr. Crickmay, architect and surveyor. He said that in his opinion nothing whatever was done on No. 421 which could have affected the stability of No. 422. After his interview with Mr. Wiltshire he informed the London County Council as to the condition of the wall. The wall was very old, probably nearly 200 years. The mortar was entirely disintegrated and the bricks very much decayed. In his opinion it had been built of old materials and bricks. It was impossible to regard it as a sound wall, and it would be ridiculous to put anything upon it.

Taking the two buildings Nos. 421 and 422 as they in fact existed, was No. 422, in your opinion as an architect, getting any assistance or support of any kind from No. 421 ?—None whatever.

In the position in which the two buildings stood to each other, would it have assisted No. 422 to keep standing or have tended to endanger its standing to pull No. 421 down ?—In my opinion No. 422 would have been safer after No. 421 had been removed.

Has Mr. Lorden from beginning to end after the undertaking was given done any act whereby the support which was in fact enjoyed by No. 422 been in any way diminished ?—Nothing whatever.

Examination continued,

The trench which had been dug did not in any way affect the stability of No. 51, Bedford-street. The wall of No. 51 did not in fact give or crack in any way. The trench was afterwards filled in with concrete. They had never interfered with or trespassed upon the plaintiff's premises, Nos. 422, Strand, and 51, Bedford-street, and nothing that the defendants had done had put the plaintiff to any expense or damage.

Cross-examined,

He had nothing to do with Messrs. Sabey & Co.'s contract to pull down. He was familiar with the London Building Act, and knew that if a building-owner exercised the powers given him by the Act he had to do certain things for the adjoining owner. The reason in this case they did not proceed under the Act was because they were not allowed. The adjoining owner had appointed a surveyor to act for him in the matter, and witness thought he was appointed for that purpose. Within one week of the time an action had been started. He had never intended to use the dangerous structure notice as his method of proceeding, but he was forced to it.

Mr. G. B. I'Anson, examined, said he had had a large experience in London as an architect. He first went on the place in question on October 13, and made a careful inspection. He had heard Mr. Crickmay's evidence and agreed with it.

Mr. J. W. Lorden, one of the defendants, examined, said he had been a master builder for some twenty-three years, and had erected some of the largest buildings in London. He was president of the Master Builders' Association. He obtained a building lease of the premises in question, and paid 1,400*l*. a year ground rent. He was under a covenant to complete his buildings by midsummer.

His lordship stating that he did not think this evidence was material to the issue, the witness left the box.

Mr. Joseph Sabey, examined, said he was a member of the firm of H. Sabey & Co., pulling-down contractors. His firm had the contract with Mr. Lorden to pull down his buildings. No process was adopted in pulling down No. 421 which was not the usual practice in pulling down houses. They had by the undertaking Mr. Lorden had been obliged to give been absolutely hung up from August 1 to October 9.

At the close of the defendant's case, Mr. Terrell, in summing up the evidence on behalf of the plaintiff, said his client was in the position of a man who felt that he was being taken advantage of by Mr. Lorden. The plaintiff did not wish to part with his house, so Mr. Lorden got the district surveyor to come along and condemn his wall. Plaintiff's one anxiety was to preserve the wall and the defendants' one anxiety was to get the wall down so that they could rebuild their premises. He contended that so far as the moral aspect of the case was concerned the advantage, if there was one, was on the side of the plaintiff. The plaintiff was not the attacking party, but he had been driven into a most difficult position by the defendants. He submitted that the defendants had not been straightforward in the course they had adopted. The first question to consider was to whom the party wall belonged ? In his view it was abundantly clear that the wall belonged to the plaintiff. The evidence showed that the party wall was bonded into the front wall of No. 422. That showed that it was the plaintiff's party wall. Then they had to consider whether the plaintiff's premises received any support from No. 421.

His lordship : The question is whether the support was received as of right.

Mr. Terrell submitted that the plaintiff had the right to the support.

His lordship : Assuming that the wall was in the dangerous state the London County Council said it was the effect of the defendants' operations did not endanger the wall but merely disclosed the danger.

Mr. Terrell urged that all the wall wanted was repairing. His learned friend, Mr. Astbury, had said he should call the district surveyor, and he thought he had a right to complain that he had not called him.

His lordship said that Mr. Terrell could have called him.

Mr. Terrell replied that if he had done so he could not have cross-examined him. All the indications, he said, showed that No. 422 received support from No. 421. If not why did the defendants shore up No. 51, Bedford-street before they began to pull down No. 421 ? He submitted that No. 422 got a clinging support from No. 421, and when No. 421 was removed it endangered No. 422.

His lordship : Supposing it did get the support it does not follow that it got it as a matter of right.

Mr. Terrell contended that the plaintiff's premises got the support as a matter of right, and that it had been proved that the defendants had excavated within 10 ft. of the party wall.

His lordship, in giving judgment, after stating the facts, said the main complaint on the part of the plaintiff was that the defendant, Mr. Lorden, by the other defendants, Messrs. Sabey & Co., a firm of housebreakers, had deprived No. 422 Strand, of certain support which the plaintiff alleged that house was entitled to receive from No. 421, Strand. There were some minor claims in regard to alleged trespasses which he would afterwards deal with. The two houses, Nos. 421 and 422, were old houses, admittedly more than 100 years old, and he should conjecture that they were considerably older than that. Whether No. 422 was built before No. 421, as was alleged by the plaintiff, was a matter of considerable doubt ; but for the purpose of this case he thought he might safely assume that the plaintiff's theory was the right one, and that No. 422 was built as a complete house, the eastern wall being just the external wall before No. 421 was built at all. At some time or another, then, No. 421 was built by the side of No. 422. Dealing with the evidence in the case his lordship said he was satisfied that the plaintiff intended to represent to Mr. Crickmay that Mr. Wiltshire was appointed his surveyor under the party wall notice of either May 3 or the following July, and that Mr. Crickmay negotiated with Mr. Wiltshire as such surveyor. At that time he was satisfied on the evidence that Mr. Lorden, acting by Mr. Crickmay, intended to pull down lawfully and to build equally lawfully, and that he had no intention of building, as the Statement of Claim alleged, regardless of the plaintiff's rights. With regard to the point as to whether the party wall notice of May 3 was in the circumstances a valid notice, his lordship said it was one of those cases in which a great deal of the subsequent trouble and expense was caused by the one party not dealing quite frankly with the other. He did not believe that in one case out of a thousand any advantage was obtained by sitting on a technical objection, and if Mr. Crickmay had thought there was a technical objection to the party structure notice they would not have had this litigation. He had only to say on this part of the case that in his opinion the defendant, Mr. Lorden, never had any intention at all of proceeding with his building operations regardless of the plaintiff's rights. The substantial question he had to determine was, was the plaintiff legally entitled to any support from the house No. 421 of which he might have been deprived ? It was said that No. 422 enjoyed a clinging or hanging support from No. 421, and that it was prevented from falling into Bedford-street first by the beams of No. 421 inserted into it, and secondly by the tie-rods. He did not believe for one moment that the fact that the beams of the house were inserted into the wall had the least effect in preventing the wall or the house from falling to the west. Then it was said that the house derived support of the clinging or hanging nature from the tie-rods. It was very possible that it did, and having regard to the uncertain state in which the case was necessarily left as to the stability of the house as a whole he did not propose to decide that the plaintiff's house did not enjoy some clinging support from the tie-rods. He thought it was very probable that it did. At any rate, he would assume that it did. Then the question was, was the owner of the house No. 422 a person who actually enjoyed an easement of support claiming a right thereto for the period of

forty years? He thought it had been sufficiently proved that the tie-rods had been in existence more than forty years. But the plaintiff had to prove, in his opinion, not only that there had been enjoyment of support during the forty years, but that amongst other things in order that it might be enjoyed as a right that it was an enjoyment notorious and open. In the present case, was it notorious and open? In his opinion it was not. He thought the situation of the rods was such that the ordinary owner of land diligent in his interest could not be taken to have had a reasonable opportunity of becoming aware of their enjoyment. Therefore, the plaintiff had not acquired the easement he claimed. If that was right it seemed to him that the plaintiff's case failed altogether, so far as his claim to support was concerned. In that view of the case he had nothing to do with the London Building Act at all because the defendants had not been claiming to exercise, and had not exercised, any of the rights given by a building owner over a party structure. The proceedings were taken under the dangerous structures portion of the Act which had involved the removal of the wall. With regard to that the plaintiff alleged that the dangerous condition of the wall was solely in consequence of the defendants' wrongful acts. In his opinion, the dangerous condition of the wall was not occasioned by the acts of the defendants at all. What did happen was that the dangerous condition of the wall was disclosed by the defendants' operations, because while the roof was on the condition of the wall could not be discovered. The removal of the building No. 421, therefore, did not in his opinion involve any interference with the said party structure nor any withdrawal of support to which that wall was entitled. Then it was said that the defendants had withdrawn the support in another way, *viz.*, that after October 24 the defendants began excavating the site for the purpose of making the foundation of their new building, and in so doing dug right under the portion of the wall of Bedford-street and so endangered the stability of the plaintiff's premises and diminished the support it enjoyed. Had the plaintiff made out that part of his case? In his lordship's opinion he had not. That the defendant, Mr. Lorden, excavated on the site and excavated some distance below the foundation of a portion of the wall of No. 422, Strand, and the wall of No. 51, Bedford-street, was not denied, but he had had no evidence that that excavation in any way endangered either the wall already condemned by the dangerous structure proceedings of the London County Council or the wall of No. 51, Bedford-street. That being so that allegation in the Statement of Claim also failed. On this part of the case he had the evidence of Mr. Crickmay, who was a most excellent witness, and whom he should trust on a matter of fact like that. The only remaining part of the case it was necessary for him to deal with was the alleged trespass by the defendants putting up some shores and by removing a few bricks at the top of the wall. He thought there were a few bricks removed from the top of the wall, which if the wall was the plaintiff's, could be regarded as a technical trespass. It was not one in which any substantial damage was concerned, nor was it in any sense whatever the foundation for an action, and therefore even if it did amount to a trespass it was not one in which the plaintiff would be entitled to any relief. With regard to the putting up of the shores the evidence had satisfied him that the plaintiff knew of and raised no objection to the shores being put up, and he thought the shores against the Bedford-street premises were put up with the plaintiff's consent. For these reasons he was of opinion that the plaintiff's action failed altogether, and there must be judgment for the defendants with costs.

His lordship directed that an inquiry should take place before an Official Referee as to the damages Mr. Lorden had suffered by reason of two undertakings he had had to give on interlocutory proceedings taken by the plaintiff, the effect of which was to stop and delay his building operations. His lordship directed that the costs of the inquiry should be reserved, and that the costs of Mr. Draper's motion on October 24 last to attach Mr. Lorden should be made costs in the action.

CASE UNDER THE METROPOLIS MANAGEMENT ACTS.

IN the Court of Appeal, before the Master of the Rolls and Lords Justices Cozens-Hardy and Moulton, on the 8th inst., the case of the King *v.* Garrett (Metropolitan police magistrate) and the Mayor and Borough of Wandsworth was heard.

Mr. Horace Avory, K.C., and Mr. Morten, appeared for the Wansdworth Borough Council; and Mr. Danckwerts, K.C., Mr. H. Drysdale Woodcock, and Mr. G. Considine O'Gorman for Mr. A. C. Ballard, the applicant for the prohibition.

Mr. Avory, in opening the case, said he appeared to show cause, on behalf of the Wandsworth Borough Council, against a rule granted in that Court for a prohibition directed to Mr. Garratt, one of the magistrates of Metropolitan Police Courts, to prohibit him from proceeding to hear and determine an application made by the Council for the payment of a sum of money claimed to be due from Mr. Ballard as his proportion of the cost of repairing a road in the district of the Council. The Divisional Court, consisting of the Lord Chief Justice and Justices Darling and Kennedy, refused to grant a *rule nisi* for a prohibition, and then Mr. Danckwerts applied *ex parte* for a rule to the Court of Appeal on the ground that the magistrate had no jurisdiction to entertain the application, and the *rule nisi* was granted, which he (counsel) now contended should be discharged. The question in dispute arose under the Metropolis Management Amendment Act, 1890, under the powers of which the Council repaired a carriage-road within their district which was not a street and which was not in a sufficiently advanced state to be paved as a "new street" and taken over by the Council. Mr. Ballard disputed his liability to pay the sum apportioned upon him on the ground that the works were not "necessary works of repair" within the meaning of sect. 3 of the Act, and then the Council took proceedings to recover the amount, 239*l.* 7s., from him. Mr. Ballard then applied for the prohibition on the ground that the magistrate had no jurisdiction to entertain the claim, and the magistrate adjourned the hearing until the application for the prohibition was disposed of. Sect. 3 of the Metropolis Management Amendment Act, 1890, for the first time gave the local authority power to repair a roadway which was not in a sufficiently advanced stage to require paving before being taken over by them under the Metropolis Management Acts, 1855 and 1862. Sect. 3 of the Act of 1890 ran as follows:—"Any vestry or district board may from time to time execute any necessary works of repair upon any or any part of any carriage-road within their parish or district which shall have been used for not less than six months for public traffic, and which may not at the time of such repair have become repairable by them, and shall not by undertaking such repair prejudice or affect the powers of such vestry or district board to apportion and recover the expenses of paving such road or way, if and when the same shall be paved as a new street under the Metropolis Management Acts." The question in dispute arose under the next branch of the section:—"The expenses of and incident to such repair may, in the first instance, be paid by the vestry or district board in the same manner as the expenses of repairing other streets repairable by them, and shall as soon as may be thereafter be apportioned upon and recovered from the owners of the houses and land bounding or abutting on such road, or part thereof, in the same manner as if such expenses were expenses of paving such road, or part thereof, as a new street, under the provisions of the Metropolis Management Acts relative thereto, and the amount of the expenses so apportioned may be recovered by the vestry or district board in a court of competent jurisdiction." His contention was that "court of competent jurisdiction" meant a court competent to order payment of paving expenses under the earlier Acts. Paving expenses under the Acts of 1855 and 1862 could be recovered either by an action at law or before justices. Therefore, under sect. 3 of the Act of 1890 the expenses of repaving the road could be recovered either by an action at law or before justices, and either of the tribunals there referred to was a "court of competent jurisdiction." As the Summary Jurisdiction Act, 1848, gave a Metropolitan police magistrate power to do alone what was authorised to be done by any one or more justices of the peace, he contended that the magistrate in the present case had jurisdiction to entertain the claim. He submitted, therefore, that the rule for a prohibition should be discharged.

Mr. Danckwerts, on behalf of the applicant, submitted that the rule ought to be made absolute. The whole dispute between the parties was whether the Council had merely done the necessary work of repair to the road, or whether they had not, instead of merely repairing the road, really made a new road. The amount of the apportioned repair expenses was a debt due from the frontagers, and a "court of competent jurisdiction" for entertaining a claim for that debt was a court of law. He contended that a justice or a Court of Summary Jurisdiction had no jurisdiction to entertain a claim for debt unless it was given to them by statute.

In giving judgment the Master of the Rolls said the case in substance was an appeal from the refusal of the Divisional Court to grant a rule for a writ of prohibition to prohibit the magistrate from entertaining and the borough council from further proceeding with a claim by the latter to recover a sum apportioned upon the applicant for the rule in respect of the expenses of repairing a road unders ect. 3 of the Metropolis Management Amendment Act, 1890. The question in dispute turned upon the construction of sect. 3 of that Act. It seemed to him that the words "court of competent jurisdiction" were general words inserted at the end of the clause in view of the fact that elsewhere the section had provided for the recovery and the manner of recovery of the expenses, and were intended to include every possible court which under the provisions of the earlier statutes could entertain a claim for the recovery of the expenses of paving a new street. The words "court of competent jurisdiction" were only a compendious mode of referring to the courts or tribunals which had jurisdiction in the matter of claims to recover paving expenses, and therefore they had the right of looking at the earlier Acts of 1855 and 1862. He thought it was not inconsistent with the provisions in those Acts to say that the court in which paving expenses were recoverable was a "court of competent jurisdiction." He agreed with the decision of the Divisional Court, and was of opinion that the rule for a prohibition ought to be discharged.

The Lords Justices concurred.

IMPORTANT TO BUILDERS AND PLUMBERS.

AT Lambeth County Court on February 14, before Judge Emden, A. E. Roots, carrying on business as a builder in Harleyford-road, Vauxhall, sued Samuel Levy, of Inchfield, Manor-road, Forest Hill, to recover 2*l.* 18s. 8d. for work done in connexion with a burst water main supplying two houses owned by defendant in Tate-street, Vauxhall.

Mr. Levy objected to an item in the account, "laying new water service sixty feet lead pipe, 1*l.* 10s." He said he had never given an order for this. Plaintiff called an official of the Metropolitan Water Board, who deposed that under the Act of Parliament the service pipe should be lead instead of iron as it had previously been. Mr. Roots had acted according to the regulations in putting in the lead pipe.

Judge Emden: But the lead cannot be substituted for the iron without authority. There must be some protection for the householder.

The Water Board official quoted the Act of Parliament in support of plaintiff's case, and plaintiff on being recalled said that he had the verbal authority of Mr. Levy to put in the lead pipe.

Defendant denied this.

Judge Emden said that the case was an important one to all householders. He could not hold that a plumber should be so far guided by the regulations of the Water Board that he could do the work prescribed by those regulations without the authority of the householder. He held upon the facts that this authority had not been given, and accordingly entered judgment for the defendant with costs.

Defendant asked for personal expenses for two days he had attended the court.

Judge Emden said plaintiff had done some work properly, and should be allowed something for this. After discussion, it was decided to allow defendant his personal expenses, out of these he was to pay 1*l.* to defendant for work done.

ACTION FOR THE RECOVERY OF FREIGHT.

AT the Liverpool County Court, on the 11th inst., his Honour Judge Shand delivered his judgment in the case of C. Neilson & Sons *v.* Charles Taylor, Sons, & Co. The plaintiffs were the owners of a steamship named the *Dulcie*, and the defendants are timber merchants in Liverpool.

His Honour said this was an action brought by the plaintiffs, the owners of the steamer *Dulcie*, to recover 30*l.* 5s. 10d., balance of freight alleged to be due under a charter party upon a cargo of timber consisting of logs and deals, carried in the *Dulcie* from Pensacola to Fleetwood. The defendants, as consignees of the cargo, counterclaimed for 26*l.* 4s. 11d. alleged by them to be due in respect of sixteen logs and twenty-three deals short delivered at Fleetwood, and for damaged cargo agreed at 1*l.* 5s. 3d. The *Dulcie* shipped at Pensacola 4,654 logs and 1,317 deals, which were carried under the terms of a charter party dated April 26, 1906. The ship when discharging her cargo, having raised the logs to the rail by the ship's tackle, then lifted one end and shot the logs into the water where they were collected into rafts by the consignees, who had men to receive them, and were floated away by the receivers into the timber pond, which was adjacent to the dock. The deals were hove up by the winch out of the hold and then loaded down on the rafts made by the receivers of the cargo by the ship's tackle, and the deals were subsequently conveyed by the stevedore to the quay, where they were piled. It was admitted that in the discarge of the logs several, either because they were sappy or otherwise not buoyant, when entering the water stuck end up in the mud at the bottom of the dock, and some sank bodily to the bottom of the dock, which according

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List of Competitions, Contracts, etc.

For some Contracts still open, but not included in this List, see previous issues. Those with an asterisk (*) are advertised in this Number: Competitions, iv.; Contracts, iv. vi. viii. x.; Public Appointments, —; Auction Sales, xxviii.

Certain conditions, beyond those given in the following information, are imposed in some cases, such as: the advertisers do not bind themselves to accept the lowest or any tender; that a fair wages clause shall be observed; that no allowance will be made for tenders; and that deposits are returned on receipt of a bonâ-fide tender unless stated to the contrary.

*** It must be understood that the following paragraphs are printed as news, and not as advertisements: and that while every endeavour is made to ensure accuracy, we cannot be responsible for errors that *may* occur.

Competitions.

* MARCH 9.—**Wimbledon.**—SCHOOL.—The Wimbledon Education Committee invite designs for a new Elementary School in Pelham-road, Wimbledon, to accommodate 1,000 children. Architects to send their names to Mr. A. Stede Sheldon, Clerk to the Committee, 12, Queen's-road, Wimbledon, with a short statement as to their qualification and experience in similar work, on or before March 9. The author of the design placed first will be paid a premium of 150*l.*, to merge in the usual commission upon his appointment to carry out the work. Premiums of 100*l.* and 50*l.* for designs placed second and third respectively. Not more than fifteen architects will be selected to take part. Three months will be allowed for the preparation of the necessary drawings.

MARCH 28.—**Failsworth.**—LIBRARY.—Failsworth U.D.C. invite competitive designs for a public library (cost not to exceed 3,000*l.*) proposed to be erected on land adjoining the Council Offices, Oldham-road, Failsworth. Premiums of 20*l.* and 10*l.* respectively will be awarded to the authors of the designs adjudicated first and second in order of merit. A plan of the site, together with a copy of the conditions and instructions to competing architects, may be obtained on application to Mr. H. C. Broome, Clerk to the Council, Council Offices, Failsworth, on payment of a deposit of 1*l.* 1s. All the designs and particulars must be delivered free of cost at the office of the Clerk not later than 12 noon on March 28.

MARCH 30.—**Dudley.**—LIBRARY.—Competitive plans are invited from architects practising within fifty miles of Dudley for a new free library, to be erected in St. James's-road, Dudley. An architect of standing will act as assessor. Plans to be submitted not later than noon on March 30. A plan of the site and conditions of competition may be obtained from Mr. Hy. C. Brettell, Town Clerk, Town Hall, Dudley.

APRIL 30.—**Wednesbury.**—PUBLIC LIBRARY.—The Libraries Committee invite designs in competition for a public library. Competition is open to all architects resident or who have offices within a fifty-miles radius from Wednesbury Town Hall. Premiums of 50*l.*, 30*l.*, and 20*l.* will be paid for designs placed first, second, and third in order of merit. Conditions, plan of site, etc., are obtainable on application to the Town Clerk, Town Hall, Wednesbury, to whom designs are to be delivered, carriage paid, on or before April 30.

MAY 17.—**Birkenhead.**—LIBRARY.—Birkenhead Corporation are prepared to receive competitive designs for the erection of a new central public library on a site fronting to Market-place South and Albion-street, Birkenhead. The competition is confined to architects practising within the borough. A block plan of the site, together with a printed copy of the particulars, instructions, and conditions of competition for the guidance of competing architects, will be supplied to intending competitors on application to Mr. Alfred Gill, Town Clerk, Town Hall, Birkenhead, upon payment of the sum of 1*l.* 1s. An assessor appointed by the Corporation will report to the Corporation upon the designs and estimates submitted. Subject to the conditions of the competition, premiums of fifty, thirty, and twenty guineas respectively are in the order of selection offered to the authors of the three designs and plans (if any), which, in the opinion of the assessor, merit premiums. All designs are to be delivered in such manner as not to disclose the identity of the author, in one package, marked "Central Library Competition," at the Town Clerk's Office, Town Hall, Birkenhead, not later than 4 o'clock p.m. on May 17.

* AUGUST 27.—**London.**—COUNTY HALL AND OFFICES.—The London C.C. invite competitive designs for the erection of a new county hall and offices on a site of about 5½ acres. Full particulars as to premiums and other information will be found in an advertisement in this issue. Designs are to be in by August 27.

Contracts.

BUILDING.

FEBRUARY 23.—**Chopwell.**—EXTENSION OF PREMISES.—For extension of premises at the Chopwell Branch of the Blaydon District Industrial and Provident Society. Apply by letter, stating trade, to Mr. F. M. Dryden, architect, 6, Market-street, Newcastle-on-Tyne, not later than February 23.

FEBRUARY 23.—**Saunderton.**—ROOF REPAIRS.—Wycombe Guardians invite tenders for repairing the roofs of the Workhouse, Saunderton. Tenders to be upon a schedule of prices, forms of which may be obtained from Mr. Thos. Thurlow, architect, High-street, High Wycombe. Tenders to be delivered to Mr. B. L. Reynolds, Clerk to the Guardians, 12, Easton-street, High Wycombe, not later than 1 p.m. on February 23, marked "Tender for Repairing Roofs."

FEBRUARY 25.—**Blaengwynfi.**—MISSION ROOM.—A new mission room on Blaengwynfi. Plans and specifications may be seen at the residence of Rev. B. V. Davies, 2, Margaret-terrace, Blaengwynfi, from whom copies of quantities may be obtained on deposit of 1*l.* 1s. Sealed and endorsed tenders to be delivered to Rev. B. V. Davies on or before February 25.

FEBRUARY 25.—**Macclesfield.**—ALTERATIONS TO BATH.—Macclesfield Baths Committee invite tenders for alterations at the small plunge bath at the Macclesfield Public Baths. Plans and specification may be seen at the Borough Surveyor's Office, Town Hall, during office hours. Sealed tenders, marked outside "Tender for Alteration, Small Plunge Bath," to be sent addressed to the Chairman of the Baths Committee not later than February 25.

FEBRUARY 25.—**Stockton-on-Tees.**—LIBRARY.—The Corporation invite tenders for the alterations to the Free Library. Plans and specifications may be seen, and further information obtained, at the Borough Engineer's Office, Town Hall, Stockton-on-Tees. Tenders, endorsed "Free Library Alterations," to be sent to Mr. Arthur B. Crosby, Town Clerk, Borough Hall, Stockton-on-Tees, not later than 10 a.m. on February 25.

FEBRUARY 26.—**Huddersfield.**—CHIMNEY.—The erection of a long chimney at Hirst's Yorkshire Toffee Works, Viaduct-street, Huddersfield. Plans may be seen, and bills of quantities obtained, at office of Mr. J. Berry, architect and surveyor, 3, Market-place, Huddersfield. Tenders to be forwarded not later than February 26.

FEBRUARY 26.—**Surbiton.**—CONVENIENCES.—The U.D.C. of Surbiton invite tenders for the construction of two public conveniences at the Victoria Recreation Ground in the Balaclava-road, Surbiton. Specification and plans can be seen on application to Mr. Henry T. Mather, Surveyor to the Council, Council Offices, during office hours. Tenders, made out on the forms supplied, and enclosed in sealed envelopes, endorsed "Tender for Conveniences," must be delivered at the Council's Offices before 10 a.m. on February 26.

FEBRUARY 27.—**Cardiff.**—STORES.—Cardiff Corporation invite tenders for the erection and completion of a joint stores at Trade-street Depôts. Plans, specification, and conditions of contract may be seen, and bills of quantities obtained, at the office of Mr. W. Harpur, M.Inst.C.E., City Engineer. Tenders, on the prescribed form, and accompanied by the bills of quantities, under separate cover, to be sealed and endorsed "Tender for Joint Stores," and to be delivered at office of Mr. J. L. Wheatley, Town Clerk, City Hall, Cardiff, on or before February 27.

FEBRUARY 27.—**Hull.**—CUSTOMS OFFICES, ETC.—North-Eastern Railway Directors invite tenders for the erection of customs offices, waiting-rooms, etc., Albert Dock, Hull. Plans and specification may be seen, and quantities and further information obtained, upon application to Mr. William Bell, the Company's Architect, at York. Duplicate plans may also be seen upon application to the Station-master, Paragon Station, Hull. Quantities supplied on personal application to parties tendering for the whole of the works. Sealed tenders, marked "Waiting-rooms, etc., Albert Dock, Hull," to be sent to the Secretary at York not later than 9 a.m. on February 27.

FEBRUARY 27.—**Liverpool.**—ALTERATIONS TO OFFICES.—West Derby Guardians invite tenders for alterations to frontage of the West Derby Union Offices, Brougham-terrace, West Derby-road, Liverpool, from contractors having places of business and workshops within the Unions of West Derby, Township of Toxteth Park, or the Parish of Liverpool. Specification, plans, and particulars can be seen at the office of the Architect, Mr. C. H. Lancaster, Brougham-terrace, West Derby-road, from which the contractor must take his own quantities. Sealed tenders, endorsed "Tender for Alterations to Frontage, West Derby Union Offices," to be sent in to Mr. Harris P. Cleaver, Clerk to the Guardians, Brougham-terrace, West Derby-road, Liverpool, not later than 9 a.m. on February 27.

FEBRUARY 28.—**Bushbury.**—MORTUARY.—Cannock R.D.C. invite tenders for the erection of a public mortuary at Bushbury. Plans can be seen, and specifications, bills of quantities, and forms of tender can be obtained, on application to Mr. Herbert M. Whitehead, Engineer, Penkridge, Stafford. The sum of 1*l.* 1s. will be charged for the quantities. Tenders, on the forms supplied, endorsed "Bushbury Mortuary," must reach Mr. A. W. Carver, Clerk to the Council, Union Offices, Cannock, by 12 o'clock noon on February 28.

FEBRUARY 28.—**Crosland Moor.**—HOUSE.—Various works (plumbers' work excepted) required to be done in the erection of a dwelling-house, Barton-road, Crosland Moor. Plans may be seen, and bills of quantities obtained, at office of Mr. J. Berry, architect and surveyor, 3, Market-place, Huddersfield. Tenders to be forwarded not later than February 28.

FEBRUARY 28.—**Hull.**—SCHOOL WORKS.—Hull Education Committee invite tenders for the necessary work to be performed in the alterations and additions to the Constable-street School. Drawings and specifications may be seen at office of Mr. Joseph H. Hirst, City Architect, Town Hall, Hull, and quantities obtained upon a deposit of 2*l.* 2s. Remittances to be made payable to the City Treasurer. Tenders, sealed and endorsed "Tender for Alterations to Constable-street School," are to be addressed to the Secretary of Education, and delivered at the Education Offices, Hull, before 2 o'clock on February 28.

FEBRUARY 28.—**Llyswen.**—HOUSE.—For erection of a brick-built house, at Llyswen, three-quarter mile from Boughrood Station. All haulage provided. Sealed endorsed tenders to reach Mr. James Gunter, F.S.I., Glasbury, Hereford, on or before February 28.

* FEBRUARY 28.—**St. Albans.**—STABLING.—The Midland Railway Company invite tenders for erection of stabling for twelve horses, loose box, van shed, etc., at St. Albans. Plans and specifications may be seen, quantities, and particulars obtained, on application at the Engineer's office, Derby Station. Sealed tenders to be forwarded by post to the Secretary of the Way and Works Committee, Midland Railway, Derby, before 9 a.m., February 28.

MARCH 1—4.—**Beaminster.**—CHAPEL.—Beaminster Guardians invite tenders for the erection of a chapel at the Beaminster Union Workhouse. Plans and specifications can be seen at offices of Mr. Robert Leigh, Clerk to the Guardians, Beaminster, from 10 a.m. to 4 p.m., up to and inclusive of March 1. Tenders to reach the Clerk by 10 a.m. on March 4.

MARCH 1.—**Caledon.**—SCHOOLS.—For the erection of schools at Caledon, Co. Tyrone. Plans and specifications, by Messrs. Doolin, Butler, & Donnelly, Dublin, may be seen at the Parochial House, Aughnacloy, or can be obtained by letter. Application to be made to Rev. W. J. Booth, P.P., Aughnacloy, and tenders to be delivered to him not later than March 1.

MARCH 2.—**Gilfach Bargoed.**—HOUSES.—Thirty-three "or more" houses at Gilfach Bargoed for the Gilfach Cottage Building Club. Plans and specifications may be seen at office of Mr. Wm. Harris, architect and surveyor, Gilfach Bargoed. Tenders to be sent in to the Secretary, Mr. D. O. Morris, F.A.A., The Square, Rhymney, on or before March 2.

MARCH 2.—**Leeds.**—SHOPS, ETC.—For the several trades, namely, bricklayer's, mason's, carpenter and joiner's, plumber's, plasterer's, slater's, painter's, ironfounder's, and concretor's work, required in the erection of new shops and hotel premises in Commercial-street, Leeds, for Mr. Henry Child; also for the taking down, removing, and re-erecting of the present Mitre Hotel premises upon a site in Brudenell-road. Names to Messrs. Thomas Winn & Sons, architects and surveyors, Carlton-chambers, 84, Albion-street, Leeds, on or before March 2.

MARCH 2.—**St. Just.**—RESIDENCES.—The erection of a pair of residences at Botallack Mine, in the parish of St. Just, for the Botallack Mine Company, Ltd. The drawings and specifications may be seen at the offices of the architect, Mr. Oliver Caldwell, F.R.I.B.A., Victoria-square, Penzance, by appointment. Tenders, endorsed "Tender for Residences," to be sent to the Manager, Botallack Mine, St. Just, R.S.O., on or before March 2.

* MARCH 4.—**Brighton.**—SCHOOL.—The Roedean (Junior House) School Site and Buildings, Ltd., invite tenders in all trades for the new Junior House School, between Brighton and Rottingdean. Builders desirous of tendering are requested to send their names, together with references, to the architects of buildings recently erected by them, on or before March 4, to the architects to the Company, Messrs. John W. Simpson & Maxwell, Ayrton, 3, Verulum-buildings, Gray's-inn, W.C.

MARCH 4.—**Exmouth.**—Y.M.C.A. PREMISES.—The erection of new premises, Victoria-road, Exmouth, for the Young Men's Christian Association. Quantities will be supplied on application being made to Mr. Ernest E. Ellis, architect, Exmouth, not later than February 23, together with a deposit of 2*l.* 2s. Endorsed tenders to be sent to the architect by noon on March 4.

MARCH 4.—**Heage.**—SCHOOL.—The Derbyshire Education Committee invite tenders for the extension of the Heage Endowed Council School, to accommodate about 150 children. Drawings, specification, agreement, etc., may be seen at the office of the Architect to the Committee, St. Mary's Gate, Derby. A copy of the bill of quantities form of tender, etc., can be obtained at the Architect's office upon payment of 1*l.* 1s. Sealed tenders, in envelopes provided for the purpose, endorsed "Tender for Alterations, Heage School," must be delivered to Mr. George H. Widdows, A.R.I.B.A., Architect to the Committee, County Education Offices, St. Mary's Gate, Derby, not later than 5 p.m. on March 4.

MARCH 5.—**Fulwood, Sheffield.**—HOSPITAL ANNEXE.—The erection of annexe at Fulwood, for the Sheffield Royal Hospital. Contract No. 1, for excavation, forming grounds, road-making, and laying-out of grounds; contract No. 2, for buildings; contract No. 3, for heating apparatus. Drawings and specification may be seen, and bills of quantities obtained, on application at offices of Messrs. Gibbs & Flockton, architects, 15, St. James's-row, Sheffield. Tenders to be addressed to "The Chairman of the Building Committee," and delivered at the Royal Hospital, West-street, on March 5.

* MARCH 5.—**Kingston.**—POST-OFFICE.—The Commissioners of H.M. Office of Works, etc., invite tenders for enlargement of the Head Post-office at Kingston-on-Thames. Drawings, specifications, copy of conditions, and form of contract may be seen on application to Mr. J. Rutherford, H.M. Office of Works, S.W., between 11 a.m. and 4 p.m. Bills of quantities and forms of tender obtained from undermentioned address. Tenders to be delivered,

addressed to the Secretary, H.M. Office of Works, Story's-gate, S.W., and endorsed "Tender for Kingston-on-Thames Post-office Enlargement," before 12 o'clock noon, March 5.

MARCH 5.—**Southampton.**—BATH.—Southampton Corporation invite tenders for the reconstruction of the Chamberlayne Bath at Northam, in ferro-concrete on the "Hennebique" system. Plans, specification, and conditions may be inspected, and bills of quantities obtained, at the Borough Engineer's office upon production of the Borough Treasurer's receipt for a deposit of 2*l.* 2*s.* Tenders, endorsed "Reconstruction, Northam Bath," must be delivered at the Town Clerk's office before 2 p.m. on March 5. Mr. R. R. Linthorne, Town Clerk, Town Clerk's Office, Municipal Offices, Southampton.

MARCH 6.—**North Dublin.**—COTTAGES.—The R.D.C. of North Dublin invite tenders for building and completely finishing fourteen labourers' dwellings within the time specified in coutract deed, viz.:—Eleven in Townland of Cabra (Blackhorse-lane); and three in the Town of Baldoyle. The work is to be carried out in accordance with the plans and specification which can be seen at the Council's office, Board-room, North Brunswick-street, Dublin, and any further information can be had from the architect. Tenders will be received in the tender-box here up to 10 o'clock a.m. on March 6.

MARCH 8.—**Bishopwearmouth.**—ALTERATIONS TO LODGE.—Bishopwearmouth Burial Board invite tenders for proposed additions and alterations to the South-east Lodge, Bishopwearmouth Cemetery. Drawings and conditions of contract may be seen, and bills of quantities and form of tender obtained, at the Borough Engineer's Office, Town Hall, Sunderland. Sealed tenders, addressed "The Chairman of Bishopwearmouth Burial Board," and endorsed "Tender for Additions and Alterations to Lodge, Bishopwearmouth Cemetery," must be delivered at office of Mr. Fras. M. Bowey, Clerk to the Board, Town Hall, Sunderland, before 12 o'clock noon on March 8.

MARCH 9.—**Kea.**—FARM BUILDINGS.—The erection of a wain house, cattle, and root house at Lower Lanner, in the parish of Kea, in the occupation of Mr. John Wesley Vincent. Plans, conditions, and specifications are now at the farmhouse at Lower Lanner. Tenders should be sent on or before March 9 to Mr. George Gow, Tregothnan Office, Truro.

MARCH 9.—**Llandaff.**—ADDITIONS.—For additions to "Penpentre," Llandaff. The plans and specification may be seen at the office of Mr. W. H. Dashwood Caple, F.R.I.B.A., 2, Church-street, Cardiff, from whom copies of the quantities can be obtained on deposit of 1*l.* 1*s.* Tenders to be delivered to the architect on or before March 9.

MARCH 11.—**Broadstairs.**—COTTAGE ALTERATIONS.—Broadstairs and St. Peter's U.D.C. invite tenders for the carrying-out of certain alterations and additions to cottage at Crampton Tower Waterworks, and for the erection of a workship adjoining the same. Plans and specifications can be seen, and forms of tender obtained, upon application to the Town Surveyor, Mr. H. Hurd. Sealed tenders, endorsed "Alterations to Cottage, etc.," must be delivered at office of Mr. L. A. Skinner, Clerk to the Council, Council Offices, Broadstairs, not later than noon on March 11.

✱ MARCH 11.—**Ilford.**—SCHOOL.—The Ilford U.D.C. invite tenders for an elementary school for 1,230 children, together with latrines, play-sheds, caretaker's house, boundary walling, fencing, drains, etc., on the Uphall-road site, Ilford, Essex. Plans and specifications can be seen, and bills of quantities and forms of tender obtained, of Mr. C. G. Dawson, architect, 11, Cranbrook-road, Ilford, before 10 a.m. and 5 p.m., upon depositing 5*l.* 5*s.* Sealed tenders, endorsed "Tender for Uphall School," to be delivered to Mr. John W. Benton, Clerk to the Council, Town Hall, Ilford, Essex, on or before March 11.

✱ MARCH 11.—**Winchmore Hill.**—HOSPITAL EXTENSION.—Enfield and Edmonton Joint Hospital Board invite tenders for extending each end of two pavilions at the Isolation Hospital, World's End, Winchmore Hill. Plans and specifications can be seen, and all information obtained, from Mr. Richard Collins, at Public Offices, Enfield, between 9 and 11. Tenders, endorsed "Tender for Hospital Extension," to be delivered to the Clerk as above not later than 12 noon, March 11.

MARCH 16.—**Merthyr.**—HOUSES.—Merthyr Tydfil T.C. invite tenders for the erection of fifty houses at Twynrodyn, Merthyr, and for the construction of two streets in connexion therewith, including drainage works. Plans may be inspected, and forms of tender and specification obtained, from the Borough Surveyor, Town Hall, Merthyr Tydfil, upon payment of the sum of 1*l.* 1*s.* Tenders, marked "Twynrodyn Houses," must reach Mr. T. Aneuryn Rees, Town Clerk, Town Hall, Merthyr Tidfil, not later than March 16.

MARCH 19.—**Shildon, Durham.**—SCHOOL.—Durham County Education Authority invite tenders for new school at Shildon for about 1,100 scholars. Plans, etc., can be seen, and bills of quantities obtained, at the office of the County Education Committee's Architect, Shire Hall, Durham. Tenders must be submitted on the form provided for the purpose, and must be sub-divided as follows:—(1) Below ground floor levels; (2) above ground levels (including latrines, playsheds, playgrounds, boundary walls, drainage, etc.). Sealed tenders, endorsed "Shildon Council School Tender," are to be sent on or before March 19, addressed to the Clerk to the Education Committee, Shire Hall, Durham.

✱ MARCH 22.—**Lee.**—CONVENIENCES, ETC.—The London C.C. invite tenders for the erection of conveniences and a dressing-room at Northbrook-road, Bromley-road, Lee. Full particulars and also information as to conditions will be given in the London C.C. *Gazette* of February 25. Tenders must be on the official forms, and no tender will be received after 10 a.m. on March 22.

No DATE.—**Bangor.**—ALTERATIONS, ETC.—Alterations to, and painting and decorating at, Ebenezer Chapel, Bangor. Names to Harold Hughes, architect, Bangor.

No DATE.—**Beccles.**—MARQUEES, HUTS, ETC.—The Suffolk Imperial Yeomanry invite tenders for marquees, flooring, erection officers' huts, and supplies to camp (training at Beccles, May, 1907). Applications to be made to Captain Heal, 96, Hills-road, Cambridge.

No DATE.—**Downholland.**—COTTAGES.—For the building of four cottages in Downholland. Apply J. Sanders, architect, Manchester-chambers, 18, Lord-street, Southport.

No DATE.—**Llandudno.**—HOUSES.—The erection of pair of houses, Llandudno. Plans and specifications, Messrs. Mines & Sutherland, Ltd., 65, South John-street, Liverpool.

No DATE.—**Pannal.**—CLUBHOUSE.—The erection and completion of a clubhouse, Pannal, for the Pannal Golf Club (Harrogate), Ltd. Names to Mr. Richard Crosland, architect, 10, James-street, Harrogate, and quantities will be forwarded when ready.

No DATE.—**Pontefract.**—DRILL-HALL.—For the erection of drill-hall, etc., in Pontefract for Major C. C. Moxon, 2nd V.B. York and Lancaster Regiment. Names to Messrs. Garside & Pennington, architects and surveyors, Pontefract and Castleford, when bills of quantities will be supplied.

No DATE.—**Waterlooville.**—VILLAS.—For building a pair of villas at Waterlooville. Particulars may be obtained at Messrs. Timothy White's Company's Offices, Chandos-street, Portsmouth, on and after February 19. Messrs. Rake & Cogswell, architects, Landport.

ENGINEERING, IRON, AND STEEL.

FEBRUARY 23.—**Waltham Holy Cross.**—IRON FENCING.—Waltham Holy Cross U.D.C. invite tenders for about 400 ft. of wrought-iron fencing. Plans and specifications may be seen, and forms of tender may be obtained, at the office of Mr. W. T. Streather, A.M.I.C.E., Surveyor to the Council, Town Hall, Waltham Abbey. Tenders (on the forms supplied only), addressed to Mr. F. C. E. Jessopp, Clerk to the Council, Waltham Abbey, endorsed "Tender for Fencing," to be sent in not later than 5 p.m. on February 23.

FEBRUARY 25.—**Bailieborough.**—BOILER, ETC.—Bailieborough Guardians will, on February 25, receive tenders for supplying, fitting, and erecting in the washhouse of the workhouse one iron boiler, 4 ft. 2 in. inside length, 2 ft. 2 in. inside width, 3 ft. 7 in. inside depth, to fit in stationary, with a pipe projection and tap 2 in. in diameter. Tenders to be lodged with the Clerk, Mr. Hugh Clarke, Clerk of the Union, Workhouse, Bailieborough, or put into the tender box up to 12 o'clock noon on the above-mentioned day. Each tender to contain the names of two solvent sureties willing to join in a bond for the sum of 20*l.* for the due performance of the contract.

FEBRUARY 25.—**Warrington.**—IRON WORKS.—Warrington Sanitary Works Committee invite tenders for the supply and delivery at Longford Depôt of:—(1) Cast-iron troughs and special castings; (2) steel joists, tees, and plates. Further particulars may be obtained from Mr. R. Wilson, Manager, Longford Depôt, Warrington. Tenders, in securely-fastened envelopes, to be endorsed "Tender for Work, No. ——," and addressed "The Chairman, Sanitary Works Committee, Town Hall, Warrington," to be delivered not later than February 25.

FEBRUARY 26.—**Uxbridge.**—BOILER SETTING.—The U.D.C. of Uxbridge invite tenders for the removal of the brickwork seatings of two disused boilers and the building of foundations and settings for two new Cornish boilers and economiser and foundation for engine, etc. The work to be carried out in accordance with the plans and specification prepared by Mr. F. S. Courtney, M.Inst.C.E. Intending contractors, who must inspect the site, may obtain copies of the specification and inspect the drawings at the office of the aforesaid engineer, at 25, Victoria-street, Westminster, S.W., upon payment of 5*l.* Tenders, endorsed "Boiler Settings," must be delivered to Mr. W. T. Harvey, Clerk, 126, High-street, Uxbridge, on or before 12 o'clock on February 26.

FEBRUARY 26.—**Uxbridge.**—WELL WORK.—The U.D.C. of Uxbridge invite tenders for the deepening of an existing well at their works, and the driving of an adit to connect with a second well at a distance of 60 ft. therefrom. The work to be carried out in accordance with the plans and specification prepared by Mr. F. S. Courtney, M.Inst.C.E. Intending contractors, who must inspect the site, may obtain copies of the specification and inspect the drawings at the office of the aforesaid engineer, at 25, Victoria-street, Westminster, S.W., upon payment of 5*l.* Tenders, endorsed "Well Work," must be delivered to Mr. W. T. Harvey, Clerk, 126, High-street, Uxbridge, at his office on or before 12 o'clock on February 26.

FEBRUARY 27.—**Aberdeen.**—PLATFORMS, ETC.—The Aberdeen Joint Station Committee invite tenders for the works to be executed in the construction of new through platforms and sidings to the west of the existing station. Drawings may be seen at the office of Mr. James A. Parker, C.E., 80, Guild-street, Aberdeen, where copies of the specification and schedule may be obtained on payment of 1*l.* 1*s.* Sealed tenders, endorsed "Tender for Through Platforms and Sidings," to be lodged with Mr. T. S. Mackintosh, Secretary, Aberdeen Joint Station Committee, 80, Guild-street, Aberdeen, on or before February 27, at 4 o'clock p.m.

FEBRUARY 28.—**Dublin.**—STEAM TURBO-GENERATING SET.—The Lighting Committee of the Corporation of Dublin desire tenders for the installation of a steam turbine alternating current generating set of a capacity of either 1,500 or 1,000 kw., as may be selected, at their Pigeon House generating station. The set to form a complete unit, comprising turbo-alternator and exciter, switch-gear, and connexions, full condensing equipment, and alterations to existing steam range, etc., installed and erected upon foundations to be supplied by the Corporation. General conditions, specification, and form of tender may be obtained from the City Electrical Engineer, Fleet-street, Dublin, on February 22, on payment of 2*l.* 2*s.* Tenders, sealed, and endorsed "Tender for Steam Turbo-generating Set," must be addressed to the Chairman, Lighting Committee, 3, Corkhill, Dublin, and delivered not later than 12 o'clock noon on February 28.

FEBRUARY 28.—**London.**—WAGONS AND VANS.—The Crown Agents for the Colonies, acting on behalf of the Government of the Federated Malay States, invite tenders for the supply of four-wheeled goods wagons and brake vans. Forms of tender and all particulars may be obtained on application at the office of the Crown Agents for the Colonies, Whitehall-gardens, London, S.W., between the hours of 10 a.m. and 4 p.m. (Saturdays, 10 a.m. to 1 p.m.), on payment of a deposit of 1*l.* Tenders to be delivered in sealed envelopes, addressed to the Crown Agents for the Colonies, Whitehall-gardens, S.W., not later than noon on February 28, endorsed "Tender for Wagons and Brake Vans, Federated Malay States Railways."

FEBRUARY 28.—**Redcar.**—OIL ENGINE.—Redcar U.D.C. invite tenders for the supply of an 8-B.H.P. oil engine, to be attached to the present pump, at the Bore-Hole, at New Buildings Farm, near New Marske. Specification and further particulars may be obtained on application to the Surveyor, Mr. James Howcroft, 2, West-terrace, Redcar. Tenders, marked "Oil Engine," must be sent to Mr. Alfred H. Sill, Clerk to the Council, on or before February 28, at 12 o'clock noon.

MARCH 1.—**London.**—RAILS, ETC.—The Crown Agents for the Colonies, acting on behalf of the Government of British Honduras, invite tenders for the supply of (*a*) 20 lb. steel rails and fishplates; (*b*) steel sleepers and keys. Forms of tender and particulars may be obtained at the office of the Crown Agents for the Colonies, Whitehall-gardens, London, S.W., between the hours of 10 a.m. and 4 p.m. (Saturdays, 10 a.m. to 1 p.m.), on payment of a deposit of 1*l.* Tenders to be delivered in sealed envelopes, addressed to the Crown Agents for the Colonies, Whitehall-gardens, S.W., not later than noon on March 1, endorsed "Tender for (*a*) Steel Rails and Fishplates"; "(*b*) Steel Sleepers and Keys."

MARCH 2.—**Ainstable and Hesket.**—BRIDGE.—The Highways and Bridges Committee of the Cumberland C.C. invite tenders for the erection of a stone bridge of four arches, across the River Eden, in the Parishes of Ainstable and Hesket-in-the-Forest, within half a mile of Armathwaite Bridge, Armathwaite Station, M.R. Drawings and specifications for the bridge may be seen, and particulars obtained, at the office of Mr. Geo. Jos. Bell, M.Inst.C.E., County Surveyor and Bridge Master for Cumberland, The Courts, Carlisle. Forms of tender (on which alone tenders will be received) can be had on application, on payment of a fee of 1*l.* 1*s.*, accompanied by a stamped addressed foolscap envelope. Sealed tenders, endorsed "Armathwaite Bridge," addressed to the Chairman of the Highways and Bridges Committee, must be delivered at office of Surveyor on or before March 2.

MARCH 5.—**Brechin.**—BRIDGES.—The Brechin District Committee invite tenders for the construction of the following bridges, viz.:—Justinhaugh Bridge: Taking down the existing bridge over the River Southesk at Justinhaugh and erecting a new steel girder bridge. Westwater Bridge: Constructing a widening of the existing masonry bridge of three spans carrying the Brechin and Edzell Highway over the Westwater. Powmouth Bridge: Taking down the existing bridge near Bridge of Dun and erecting a new bridge. The plans may be seen at the office of Mr. Alexr. Philip, District Clerk, Brechin District Committee, 11, Panmure-street, Brechin, and at the office of the engineers, Messrs. Crouch & Hogg, C.E., 14, Blythswood-square, Glasgow. Copies of the specification, schedule of quantities, and form of tender may be obtained from the engineers on payment of 1*l.* 1*s.* for each bridge. Sealed tenders, marked "Justinhaugh Bridge," or otherwise, as the case may be, must be lodged with the District Clerk not later than 10 a.m. on March 5.

MARCH 5.—**London.**—STEAM RAIL MOTOR CARRIAGE.—The Board of Directors of the Southern Mahratta Railway Company, Ltd., invite tenders for a steam rail motor carriage. The charge for each specification is 1*l.* 1*s.*, which will not be returned. Tenders must be sent in addressed to the Secretary, Mr. Edw. Z. Thornton, 46, Queen Anne's-gate, S.W., marked "Tender for Steam Rail Motor Carriage," not later than 12 o'clock noon on March 5.

MARCH 5.—**Margate.**—BRIDGE.—Margate T.C. invite tenders for the construction of a new bridge over Newgate Gapway, in accordance with the design, plan, and specification prepared by the Borough Surveyor. A copy of the specification and any further particulars can be obtained, and plans seen, on application to Mr. E. A. Borg, C.E., Borough Surveyor, Town Hall, Margate. Tenders, endorsed "Newgate Bridge," should be sent in to Mr. Edward Brooke, Town Clerk, Town Clerk's Office, 18, Cecil-square, Margate, not later than 12 o'clock noon on March 5.

MARCH 7.—**Handsworth.**—ELECTRIC LIGHTING WORKS.—The U.D.C. of Handsworth invite tenders for the supply, delivery, and erection of the following plant at their Electric Power Station:—Contract No. 17, switchboard extension and equaliser booster. Tenders will only be considered for the whole of the work covered by the specification, and not for any part thereof. Copies of the specification, with the conditions of contract, etc., can be obtained from Mr. H. Ward, Clerk, the Council House, Handsworth, near Birmingham, on payment of 3*l.* 3*s.* The specification, conditions of contract, and drawings can be seen at (but not obtained from) the offices of the consulting engineers, Messrs. Kennedy & Jenkin, 17, Victoria-street, Westminster, London, S.W. Tenders, on the prescribed form, in sealed envelopes, and endorsed on the outside "Electric Light and Power Supply Tender, Contract No. 17," must be delivered before noon on March 7.

MARCH 11.—**Wokingham.**—BRIDGE WORKS.—Wokingham B.C. and Wokingham R.D.C. invite tenders for the construction of the brick abutments, etc., in connexion with the erection of a new bridge over the Emm Brook, in the Barkham-road, within the Parish of Wokingham. Plans may be seen, and specification and form of tender may be obtained, from Mr. C. W. Marks, Borough Engineer and Surveyor, Town Hall, Wokingham, upon payment of 1*l.* Sealed tenders, together with priced quantities, endorsed "Tender for Bridge," to be delivered at office of Engineer on or before March 11.

MARCH 18.—**Glasgow.**—RAILWAY WIDENING.—The Directors of the Caledonian Railway Company are prepared to receive tenders for the works to be executed in a widening of the railway at, and in the vicinity of, Eglington-street Station, Glasgow. Drawings may be seen at the office of the Company's Engineer, Buchanan-street Station, Glasgow, where

copies of the specification and schedule may be obtained on payment of 2l. 2s. An assistant engineer will be at the entrance to Eglington-street Station on March 1, at 11 a.m., to accompany contractors over and point out the site of the works. Sealed tenders, endorsed "Tender for Eglington-street Widening," to be lodged with Mr. J. Blackburn, Secretary, Caledonian Railway Company's Offices, 302, Buchanan-street, Glasgow, on or before March 18.

MARCH 18.—**Pontypridd.**—BRIDGE WORKS.—Pontypridd U.D.C. invite tenders for the following works:—(1) Supply and erection of steelwork in connexion with the construction of a bridge over the River Taff at the Berw, Pontypridd; (2) masonry, abutments, fence walls, and other works in connexion with above bridge; (3) supply and erection of steelwork in connexion with the construction of a bridge at Factory-lane, Graig, Pontypridd; (4) masonry, abutments, fence walls, and other works in connexion with above bridge. Plans and specifications may be seen, and forms of tender obtained, at the office of Mr. P. R. A. Willoughby, A.M.Inst.C.E., Engineer and Surveyor, on payment of a deposit of 1l. 1s. in respect of each contract. Tenders, on the prescribed forms, sealed, and endorsed "Contract No. ——" (as the case may be), must be received by Mr. J. Colenso Jones, Clerk of the Council, Municipal Buildings, Pontypridd, on or before March 18.

MISCELLANEOUS.

FEBRUARY 25.—**Whetstone, Blaby.**—SCAVENGING.—Blaby R.D.C. Parochial Sanitary Committee for Whetstone invite tenders for emptying and cleansing of all dustbins, pits, privies, cesspits, pans, and the removal of house refuse in such parish. The contract will be for twelve month from March 25 next. Tenders, sealed, and endorsed "Tenders for Removal of House Refuse, etc.," Whetstone, should be forwarded to office of Mr. B. A. Shires, Clerk, 1, Friar-lane, Leicester, on or before February 25. Further information and conditions may be obtained from Mr. Thos. Betts, 20, Leopold-street, South Wigston.

FEBRUARY 26. — **London.** — SLEEPERS, ETC. — The Directors of the Great Western Railway Company invite tenders for the supply of 100,000 creosoted Baltic sleepers, 130,000 clean Baltic sleepers, 1,250 loads creosoted Baltic crossing timbers, 1,500 loads clean Baltic crossing timbers. Specifications, with forms of tender (upon which alone tenders will be received), may be obtained upon application to Mr. G. K. Mills, Secretary, Paddington Station, London, by whom tenders, marked outside "Tender for Sleepers, etc.," will be received on or before February 26.

FEBRUARY 26.—**Marlow.**—VARIOUS.—Marlow U.D.C. invite tenders for the following, the period in each case being the year commencing April 1, 1907:—(1) Team labour for (*a*) street watering, (*b*) refuse collection, and (*c*) other work; (2) (*a*) the road refuse, (*b*) the house refuse collected; (3) the supply of forage; (4) (*a*) the public lighting of the Marlow Urban District, (*b*) repairs to lanterns, taps, and other fittings of the public lamps, (*c*) the glazing of the public lamps; (5) the care of the ornamental enclosure; (6) the supply of disinfectants. Particulars can be obtained at the office of Mr. R. Wellicome, the Surveyor to the Council, 5, High-street, Marlow. Separate endorsed tenders to be delivered at office of Mr. H. Shone, Clerk to the Council, Marlow, before 5 o'clock p.m. on February 26.

FEBRUARY 27.—**Aylesbury.**—HAULAGE.—Bucks C.C. Highways Committee invite tenders for general carting and for haulage of granite from various stations and wharves to the main roads throughout the county, during the year ending March 31, 1908. Tenders are also invited for the purchase of road sand, scrapings, and sidings, on various lengths of main roads. Tenders to be forwarded not later than February 27, to Mr. R. J. Thomas, County Surveyor, County Hall, Aylesbury, from whom forms of tender and other particulars can be obtained.

FEBRUARY 27.—**Kingston-upon-Thames.** — TEAM LABOUR.—The Corporation invite tenders for team labour for the year ending March 25, 1908. Tenders to be on a form to be obtained of the Borough Surveyor, at the Municipal Offices. Sealed tenders, endorsed "Team Labour," to be delivered to Mr. Harold A. Winser, Town Clerk, Town Clerk's Office, Kingston-upon-Thames, not later than February 27.

FEBRUARY 27.—**Tynemouth.**—CARTAGE.—Tynemouth R.D.C. invite tenders for the cartage of stone and other materials to the roads in their district during the year from April 1, 1907, to March 31, 1908 (inclusive). Specifications and forms of tender may be obtained on application to Mr. John Waters, Long Benton, Newcastle-on-Tyne, for the following sections:—No. 1, Salter's-lane, Long Benton; No. 2, Little Benton, Gosforth, etc.; No. 3, Forest Hall; No. 4, Burradon and Camperdown; No. 5, Killingworth; No. 6, Willington and Rosehill; No. 7, Hartley; No. 8, Avenue, etc., Seaton Delaval; No. 9, Laverick Hall and Newsham; No. 10, Bebside; No. 11, East Hartford. Sealed tenders to be sent to Mr. Augustus Whitehorn, 60, Saville-street, North Shields, Clerk to the Council, not later than February 27, endorsed "Tender for Team Labour."

FEBRUARY 27.—**Ware.**—FIRE-ENGINE.—Ware U.D.C. invite tenders for the supply of a steam fire-engine. A specification may be had on application at the offices of the Council. Tenders, marked "Tender for Engine," to be sent in to Mr. Geo. H. Gisby, Clerk to the Council, Town Hall, Ware, Herts, on or before February 27.

FEBRUARY 27.—**Warrington.**— AMBULANCE.— Warrington Health Committee invite tenders for an ambulance to accommodate two patients. Any further information required may be obtained at the office of the Borough Surveyor, Town Hall, at which place tenders must be delivered before 12 o'clock on February 27.

FEBRUARY 27.—**Willington.**— SCAVENGING.— Tynemouth R.D.C. invite tenders for the removal and disposal of the house refuse and for the cleansing and taking away the contents of earth-closets, privies, ashpits, and cesspools, within the contributory parish of Willington. The contract will be for a period from April 1, 1907, to March 31, 1908, inclusive. Specifications and form of tender may be obtained on application to Mr. William Bean, Inspector of Nuisances, 3, South-view, Forest Hall, Newcastle-on-Tyne. Sealed tenders to be sent to Mr. Augustus Whitehorn, 60, Saville-street, North Shields, Clerk to the Council, not later than February 27, endorsed "Tender for Willington Scavenging."

FEBRUARY 28.—**Dublin.**—MANTLES, ETC.—The Corporation of Dublin invite tenders for the supply of mantles and 6-in. Jena chimneys for street lighting for the ensuing year to March 31, 1908. Samples of at least six of each to be forwarded to the Town Clerk, City Hall, Dublin. The tenders to be enclosed in a sealed envelope, marked "Tender for Incandescent Goods," and addressed to the Chairman of the Supplies Committee, City Hall, Dublin, and forwarded on or before February 28.

FEBRUARY 28. — **Essington.** — FENCING. — Cannock R.D.C. invite tenders for the supply and fixing of about 400 lin. yds. of unclimbable wrought-iron fencing at the site of their proposed sewage outfall works at Essington, near Wolverhampton. Specifications and other particulars may be obtained from Mr. Herbert M. Whitehead, Engineer to the Council, Penkridge, Stafford. Tenders, on the forms supplied, endorsed "Tender for Fencing," must reach Mr. A. W. Carver, Clerk to the Council, Union Offices, Cannock, by 12 o'clock noon on February 28.

FEBRUARY 28.—**Lytham.**—STONE BREAKER.—Lytham U.D.C. invite tenders for a stone breaker, 16 in. by 9 in., to break not less than 8 tons per hour to 2½ in., and less. The existing stone breaker will have to be taken in part exchange. Tenders, with maker's full specification, addressed "Tender for Stone Breaker," to be delivered at the office of Mr. Chas. A. Myers, Clerk to the Council, Council Offices, Lytham, before noon on February 28.

MARCH 2.—**Billesdon.**—TEAM LABOUR.—Billesdon R.D.C. invite tenders for the cartage during the year ending March 31, 1908, from the railway station of Leicester (East and Southampton-street), Great Glenn, Kibworth, Tilton, East Norton, Lowesby, Ingarsby, and John O'Gaunt, of granite and granite and granite chippings, to such places on the district roads in the several parishes in the above-named district as the Council's Surveyor may appoint. Tenders, to be made on forms giving particulars, to be obtained at Office of Mr. W. E. Richardson, Clerk, 18, New-street, Leicester, to be sent not later than 10 a.m. on March 2.

MARCH 2. — **Darlington.** — SCAVENGING.—Darlington R.D.C. invite tenders for scavenging the whole of the parish of Middleton-St.-George. For forms of tender and conditions, apply to Mr. John Robinson, Sanitary Inspector, Union Offices, Darlington. Tenders to be sealed, and endorsed "Tender for Scavenging Middleton-St.-George Parish," to be sent to Mr. Chas. H. Leach, Clerk to the Council, Union Offices, Darlington, before noon on March 2.

MARCH 2.—**Larne.**—SCAVENGING, ETC.—The U.D.C. of Larne invite tenders for the undermentioned work, or for the supply of the undermentioned stores, for the year ending March 31, 1908:—(1) For the cleansing of ashpits (not to exceed 1s. 8d. for single pits); (2) for providing two horses and two men for general cartage in connexion with the scavenging, etc.; (3) scavengers' brushes, shovels, spades, and shafts; (4) granite kerbs and square setts; (5) Portland cement; (7) whinstone broken to pass a 2-in. ring; (8) steam rolling—for supplying as and when required a steam roller, with men, etc. (according to specification at office of undersigned); (9) gully traps. Samples of stones must be sent for inspection, and samples of the other stores can be seen at the surveyor's office. Tenders, which must be on the official forms supplied for the purpose, sealed and endorsed "Tender for ——" (as the case may be), must reach Mr. W. G. Younge, Clerk of Council, Town Hall, Larne, not later than 10 o'clock a.m. on March 2.

MARCH 2.—**Manchester.**—BENCHES AND FITTINGS.—Manchester Rivers Committee invite tenders for benches and general fittings for the new chemical laboratory at the Manchester Sewage Works, Davyhuime, Urmston. Plans of the building and general specification of the work required can be inspected at the sewage works, and copies of the specification may be obtained on application in person to the Manager of Sewage Works. Tenders should be delivered at the Town Hall not later than 10 a.m. on March 2.

MARCH 2.—**New Malden.**—FENCING.—Maldens and Coombe U.D.C. invite tenders for about 1,320 ft. of iron fencing, to be erected on land adjoining the sewage works, New Malden. Plans and specification can be seen at the office of the Surveyor, Mr. T. B. Simmons, C.E., Council Offices, New Malden. Tenders to be sent to Mr. C. T. Lewis, Clerk to the Council, Council Offices, New Malden, so as to reach him not later than March 2, and to be marked "Tender for Fencing."

MARCH 4.—**Chesterton.**—SCAVENGING.—Chesterton U.D.C. invite tenders for the collection and removal of refuse from all houses within this district, throughout the year ending March 31, 1908, according to the specification and schedule of the work, which may be seen at the office of the Surveyor. Sealed tenders, endorsed "Tenders for the Removal of Refuse," are to be delivered to Mr. John D. Bland, Surveyor to the U.D. of Chesterton, Council Offices, Chesterton, by 10 a.m. on March 4.

MARCH 4.—**Haswell.**—ACETYLENE GAS.—Haswell P.C. invite tenders for the erection and completion of an acetylene gas installation at South Hetton Colliery. Plans and specifications may be seen by appointment. Tenders, to be endorsed "Tender for Street Lighting," which must be delivered to Mr. Thomas Gustard, Clerk, Township Office, Haswell, on or before 12 o'clock noon, March 4.

MARCH 4.— **Newcastle-on-Tyne.**— SCAVENGING. — Newcastle-upon-Tyne Town Improvement and Streets Committee invite tenders for the removal of tub ashes in the Heaton and Byker districts. Specification and form of tender may be had on application to the City Engineer. Sealed tenders, addressed to the Chairman of the Town Improvement and Streets Committee, must be left at the City Engineer's Office, Town Hall, not later than 10 a.m. on March 4.

MARCH 4.— **Rotherham.**— DISINFECTANTS.—Rotherham R.D.C. invite tenders for the supply of disinfectants in fluid and power, sulphur candles, etc. Particulars and forms of tender may be obtained from Mr. B. Hey, Surveyor, 29B, High-street, Rotherham. Tenders to be sent to Messrs. Oxley & Coward, Clerks to the Council, 6, Westgate, Rotherham, not later than March 4, endorsed "Tender for Disinfectants."

MARCH 4.—**Rotherham.**—SCAVENGING.—Rotherham R.D.C. invite tenders for the removal and tipping of night soil in the contributory places of Aston, Brinsworth, Brampton Bierlow (concrete cottages only), Bramley, Catcliffe, Hooton Roberts, Orgreave, Tinsley, Treeton, Thrybergh (Whinney Hill portion, the old village, or both), Whiston (Canklow portion, the village proper, or both), and Wickersley, for the period from April 1, 1907, to March 31, 1908. Further particulars and forms of tender may be obtained from Mr. B. Hey, Surveyor, 29B, High-street, Rotherham. Tenders, endorsed "Tender for Night-soil Removal," to be sent to Messrs. Oxley & Coward, Clerks to the Council, 6, Westgate, Rotherham, not later than March 4.

MARCH 4. — **Surbiton.** — MOTOR-WAGON. — The U.D.C. of Surbiton invite tenders from manufacturers for a steam motor-wagon, enclosed type, with tipping body and interchangeable water tank, of 1,000 gallons capacity, fitted with "Warwick" Patent Sprinkler for street watering, and 9-in. internal valve at bottom of tank for sewer flushing. Tenders, made out on the form supplied, and enclosed in sealed envelopes, endorsed "Tender for Steam Motor-wagon," are to be delivered at the offices of the Council before 10 a.m. on March 4. Full specifications of the van, accompanied by drawings (blue prints or tracings), must be sent to Mr. Henry T. Mather, Surveyor to the Council, Council Offices, Surbiton, Surrey, for examination seven days before the last day for the receipt of tenders.

MARCH 4.—**Whitley.**—SCAVENGING AND LABOUR AND CARTAGE.—Whitley and Monkseaton U.D.C. invite alternative tenders for the following:—(*a*) The labour and cartage in connexion with the emptying and disposal of refuse of the ashpits, ash-boxes, and privies and shops in the district during the year from April 1, 1907, to March 31, 1908, inclusive; (*b*) team labour only in connexion with the same work for the same period. Specifications of each can be seen, and form of tender obtained, on application to Mr. J. W. Harper, Inspector of Nuisances, Council-buildings, Whitley Bay. Tenders to be sent in to Mr. Augustus Whitehorn, Clerk to the Council, 60, Saville-street, North Shields, on or before March 4, at noon, endorsed as tender for each of the said works.

MARCH 5. — **Beddington.**—SCAVENGING.—The Beddington Parochial Committee invite tenders as follows for the year ending March 31, 1908:—(1) For the weekly collection and removal of house and garden refuse; (2) for the supply of horses and carmen for street watering. Forms of tender, and conditions of contract, may be obtained at the offices of the R.D.C., Town Hall, Croydon. Sealed tenders, endorsed "Tender for ——," must be sent to Mr. Ernest John Gowen, Clerk, District Council Offices, Town Hall, Croydon, before 12 o'clock noon on March 5.

MARCH 5.—**Branston.**—CARTING.—Branston R.D.C. invite tenders for the carting of road material from the various railway stations to the different roads in their district. Forms of tender and specifications may be obtained from Mr. J. W. Sewards, Thorpe-on-the-hill, and Mr. J. W. Watson, Potterhamworth, Surveyors for their respective districts. Tenders to be delivered at office of Mr. W. B. Danby, Clerk, 2, Bank-street, Lincoln, on or before March 5.

MARCH 6.—**Northampton.**—TEAM LABOUR.—Northampton R.D.C. invite tenders for team labour on the several district roads in this district, separate tenders to be given for each district road, to be sent in not later than 10 o'clock a.m. on March 6, to the District Surveyor, at his office, 14, Guildhall-road, Northampton, from whom all particulars can be obtained.

MARCH 6. — **Wetherby.** — CARTING. — Wetherby R.D.C. invite tenders for the carting of stone from the following stations:—Wetherby, Spofforth, Pannal, Weeton, Arthington, Leeds, Marston, Scholes, Marsh-lane, Thorner, Bardsey, Copmanthorpe, Collingham, Newton Kyme, Thorparch, Tadcaster, and Cattal, to the several townships in the union for the year ending March, 1908, each contractor to state price per ton for leading according to invoice weight. For particulars apply to Mr. R. Wiseman, Surveyor, Rose Cottage, Wetherby. Tenders to be sent in to Mr. E. H. Coates, Clerk to the Council, at Wetherby, not later than March 6, marked "Tenders for Carting."

MARCH 7. — **Croydon.** — DUST REMOVAL.—Croydon R.D.C. invite tenders for the weekly collection and removal of house refuse from premises situated in the Parish of Morden, for the year ending March 31, 1908. Form of tender, etc., and all other particulars may be obtained at the offices of the R.D.C., Town Hall, Croydon. Sealed tenders, endorsed "Tender for Morden Dust Removal," must be sent to Mr. Ernest John Gowen, Clerk, District Council Offices, Town Hall, Croydon, before 12 o'clock noon, March 7.

MARCH 7.—**Wallington.**—SCAVENGING.—Wallington Parochial Committee invite tenders as follows for the year ending March 31, 1908:—(1) For the weekly collection and removal of house and garden refuse; (2) for the supply of horses and carmen for street watering. Forms of tender, and conditions of contract, may be obtained at the offices of the R.D.C., Town Hall, Croydon. Sealed tenders, endorsed "Tender for ——," must be sent to Mr. Ernest John Gowen, Clerk, District Council Offices, Town Hall, Croydon, before 12 o'clock noon on March 7.

MARCH 7.—**Derby.**—TEAM LABOUR.—Derbyshire C.C. invite tenders for the supply of team labour required on the main roads during the year ending March 31, 1908. Forms of tender and conditions of contract may be obtained at office of Mr. J. W. Horton, County Surveyor, County Offices, St. Mary's Gate, Derby, or from the undermentioned District Surveyors, and will be forwarded through the post on receipt of a stamped, addressed, foolscap envelope:—Mr. H. T. Hughes, Chapel-en-le-Frith, Stockport; Mr. J. E. Blackwall, Bakewell; Mr. B. Comb, Ashgate-road, Chesterfield; Mr. R. Watson, Norton Woodseats, Sheffield; Mr. D. Robinson, Duffield, near Derby; Mr. W. F. Perry, Repton, Burton-on-Trent. Tenders are to be delivered to County Surveyor not later than March 7.

MARCH 11.—**Wimbledon.**—DUST VANS.—Wimbledon Corporation invite tenders for the supply and delivery of two dust vans, in accordance with specification to be obtained from the Borough Engineer and Surveyor, Town Hall, Wimbledon. Sealed tenders, endorsed "Dust Vans," to be delivered at the Town Hall on or before noon on March 11.

MARCH 11.—**Wokingham.**—TIMBER.—Wokingham Guardians invite tenders for the supply of 30 or 50 fathoms of best yellow Swedish deal and batten firewood ends (no boards), to be delivered at the railway station, Wokingham, on or before the end of May, 1907. Further particulars can be obtained on application to the Master of the Workhouse, Wokingham. Tenders to be sent to Mr. John F. Sargeant, Clerk to the Guardians, Union Offices, Wokingham, on or before March 11, endorsed "Tender for Firewood."

MARCH 13.—**Merton.**—SCAVENGING.—Merton Parochial Committee invite tenders, as follows, for the year ending March 31, 1908:—(1) For the weekly collection and removal of house and garden refuse; (2) for the supply of horses and carmen for street watering. Forms of tender and conditions of contract may be obtained at the offices of the R.D.C., Town Hall, Croydon. Sealed tenders, endorsed "Tender for ——," must be sent to Mr. Ernest John Gowen, Clerk, District Council Offices, Town Hall, Croydon, before 12 o'clock noon on March 13.

MARCH 14.—**Wimbledon.**—REFUSE DESTRUCTORS.—Wimbledon Corporation invite tenders for the supply and erection of a refuse destructor on a site in Durnsford-road, Wimbledon. Plan of the site and conditions of tender may be obtained on application to the Borough Surveyor, Town Hall, Wimbledon. Last day for receipt of tenders, March 14.

MARCH 18.—**Merton.**—SCAVENGING, ETC.—The Merton Parochial Committee invite tenders as follows for the year ending March 31, 1908:—(1) For the weekly collection and removal of house and garden refuse; (2) for the supply of horses and carmen for street watering. Forms of tender, and conditions of contract, may be obtained at the offices of the R.D.C., Town Hall, Croydon. Sealed tenders, endorsed "Tender for ——," must be sent to Mr. Ernest John Gowen, Clerk, District Council Offices, Town Hall, Croydon, before 12 o'clock noon on March 13.

NO DATE.—**Halifax.**—FENCE WALL.—For dry fence wall in Kensington-road, Savile Park. Particulars may be obtained on application to Messrs. Jackson & Fox, architects, Rawson-street, Halifax.

PAINTING, etc.

FEBRUARY 23-27.—**Alnwick, etc.**—PAINTING.—The Directors of the North-Eastern Railway invite tenders for painting the station buildings, etc., on the following branches:—Alnwick and Coldstream Branch, Hexham and Allendale Branch, Bishop Auckland to Middleton-in-Teesdale Branches, and Barnard Castle to Tebay and Penrith Branches. Specifications, quantities, and further information may be obtained on application to Mr. Charles A. Harrison, engineer, Forth Banks, Newcastle-on-Tyne, up to February 23. Sealed tenders, marked "Tender for Painting," to be sent to the Secretary, at York, not later than noon on February 27.

FEBRUARY 23.—**Belfast.**—PAINTING.—The tenders are required for painting part of the Charitable Institution for Belfast Charitable Society. On application to the Lady Superintendent specifications can be given, and parts to be painted shown, between the hours of 10 a.m. and 12 noon. Tenders must be sent to the Clerk, at the Institution, before 10 o'clock a.m. on February 23.

✱ FEBRUARY 27.—**London.**—REPAIRS, ETC.—The Receiver for the Metropolitan Police District invites tenders for repairing, maintaining, and decorating police-stations, police-courts, houses, buildings, etc., situated within four miles of Charing Cross, for three years from April 1 next. Printed forms of tender, with full explanatory directions, may be obtained on payment of 1*l.* 1s. (not returnable) at the office of the Police Surveyor, New Scotland Yard, S.W. No tender will be received after 12 noon, February 27.

FEBRUARY 27.—**Sankey, Warrington.**—PAINTING.—Warrington Health Committee invite tenders for the outside painting of the Small-pox Hospital, Sankey. Specifications and all further information may be obtained at the office of the Borough Surveyor, Town Hall, at which place tenders must be delivered before 12 o'clock on February 27.

FEBRUARY 27.—**West Derby.**—PAINTING, ETC.—West Derby Guardians invite tenders for painting, paperhanging, distempering, etc., in the Nurses' Home, Mill-road Infirmary, from contractors carrying on business within the Unions of West Derby, Township of Toxteth Park, or the Parish of Liverpool. A set of quantities can be obtained from Mr. Harris P. Cleaver, Clerk to the Guardians, Brougham-terrace, West Derby-road, Liverpool, on payment of 1*l.* 1s. Specifications can be seen at the office of the architect, Mr. C. H. Lancaster, Brougham-terrace, West Derby-road. Sealed tenders, endorsed "Tender for Painting, etc., Nurses' Home," to be sent in to the Clerk not later than 9 o'clock a.m. on February 27.

MARCH 1.—**Hereford.**—DECORATION.—The Vicar and Churchwardens of St. Martin's Church, Hereford, invite tenders for the interior decoration of the church. Requirements may be had on application at the Vicarage. All tenders must be sent in by March 1.

✱ MARCH 1.—**Herne Bay.**—PAINTING, DRAINAGE, ETC.—The Metropolitan Asylums Board invite tenders for cleaning and painting and drainage works at St. Anne's House, Herne Bay, in accordance with drawings and specifications prepared by Mr. W. T. Hatch, Engineer-in-Chief. Drawings, specifications, conditions of contract, and form of tender may be inspected at the office of the Board, Embankment, E.C., and can then be obtained on payment of 1*l.* Tenders, addressed as noted on the form, to be delivered at the Office of the Board before 12 noon, March 1.

✱ MARCH 6.—**Lewisham.**—CLEANING AND PAINTING.—The Metropolitan Asylums Board invite tenders for cleaning and painting works at Park Fever Hospital, Hither Green, Lewisham, S.E., in accordance with specification prepared by Mr. W. T. Hatch, Engineer-in-Chief. Specification, conditions of contract, and form of tender may be inspected at the Office of the Board, Embankment, E.C., and can then be obtained on payment of 1*l.* Tenders, addressed as noted on the form, must be delivered at the Office of the Board before 10 a.m., March 6.

NO DATE.—**Leeds.**—WHITEWASHING.—For whitewashing walls of warehouse. Mr. Chas. E. Steel, glass merchant, 4, York-place, Leeds.

NO DATE.—**Wishaw.**—PLUMBING WORK.—Plumber work at new property in Stewarton-street for Wishaw Co-operative Society, Ltd. Schedules and other particulars may be had from Mr. James Cowie, architect, Cleland-road, Wishaw.

ROADS, SANITARY, AND WATER WORKS.

FEBRUARY 23.—**Hunslet.**—ROADWORKS.—Hunslet R.D.C. invite tenders for making-up the following streets in the township of Templenewsam:—Back Graveley-street, Park-street, Hermon-road. Plans may be seen, and specification, form of tender, and further particulars obtained, at office of Mr. W. B. Pindar, Clerk, Council Offices, Glasshouse-street, Hunslet, Leeds, upon payment of 1*l.* Tenders, endorsed "Tender for Private Street Works," to be sent to office of Clerk not later than 12 o'clock on February 23.

FEBRUARY 25.—**Leeds.**—PAVING.—Tenders are invited for paving in granite, flagging, and kerbing Sovereign-street extension. The plan and specification may be seen, and quantities obtained, at the City Engineer's Office, Municipal Buildings, Leeds, on payment of a deposit of 1*l.* 1s. Tenders, properly endorsed, should be received at the Town Clerk's Office not later than 10 a.m. on February 25.

FEBRUARY 25.—**Pontypridd, etc.**—STREET WORKS.—Pontypridd U.D.C. invite tenders for the carrying out of the following private street works:—Contract No. 1, Meadow-terrace, Treforest; Contract No. 2, Long-row, Treforest; and Contract No. 3, lane at rear of Central Hotel, Pontypridd. Plans and specifications may be seen, and forms of tender obtained, at the office of the Engineer and Surveyor, Mr. P. R. A. Willoughby, A.M.I.C.E. Tenders, on the prescribed form, sealed, and endorsed "Private Street Works—Contract No. ——" (as the case may be), must be received by Mr. J. Colenso Jones, Clerk to the Council, Municipal Buildings, Pontypridd, on or before February 25.

FEBRUARY 26.—**Edmonton.**—MAKING-UP ARGYLE-ROAD.—Edmonton U.D.C. invite tenders for making-up Argyle-road, within their district. Plans and sections may be seen, and particulars and forms of tender obtained, on application to Mr. G. Eedes Eachus, M.Inst.C.E., Town Hall, Lower Edmonton, upon payment of 2*l.* 2s. Sealed tenders, marked "Tender for Private Street Works," which must be sent in on the forms supplied by the Council's Engineer, are to be delivered at office of Mr. Wm. Francis Payne, Clerk of the Council, Town Hall, Edmonton, not later than 12 o'clock noon on February 26. Separate tenders will be received for the paving of the footways.

FEBRUARY 27.—**Carisbrooke.**—SEWER.—The Isle of Wight R.D.C. invite tenders for providing and laying a sewer at Cemetery-hill, in the parish of Carisbrooke. Tenderers can see the plan and specifications and conditions, and can obtain forms of tender, at the office of the Surveyor, Mr. H. Newland, at No. 1, Castle-street, Carisbrooke. Tenders, in sealed envelopes, marked on the outside "Cemetery-hill Sewer Extension," addressed to Mr. H. Eldridge Stratton, Clerk to the Council, R.D.C. Offices, Newport, I.W., not later than 6 o'clock in the afternoon of February 27.

FEBRUARY 27.—**Enfield.**—STREET IMPROVEMENTS.—Enfield U.D.C. invite tenders for providing and laying about 1,600 yds. run of granite kerbing, 3,300 yds. run of granite channelling, 120 yds. super granite crossings, and 12,950 yds. super of artificial stone paving, in various public streets and roads within the district of Enfield. Specifications may be seen, form of tender, and all information can be obtained, on application to Mr. Richard Collins, the Council's Surveyor, any day except Saturday. Sealed tenders, endorsed "Tender for Street Works," to be sent to Mr. T. W. Scott, Clerk to the Council, Public Offices, Enfield, not later than noon on February 27.

FEBRUARY 28.—**Alnwick.**—SEWER WORKS.—Alnwick U.D.C. invite tenders for about 500 yds. of 12-in. main sewer, etc., in Denwick-lane and Bondgate Without, and for about 400 yds. of 4-in. C. iron watermain and fittings from Bridge-street to the Royal Oak. Plans and specifications to be seen at U.D.C. Offices, Green Batt. Sealed tenders, endorsed "Sewerage" or "Watermain" respectively, to be sent in to the Committee at U.D.C. Offices, Green Batt, by 6 p.m. on February 28.

FEBRUARY 28.—**Callington.**—RESERVOIRS.—The construction of reservoirs at Callington and Kelly Bray, for the Callington Waterworks Company, Ltd. Plans, specifications, and all further particulars may be seen at the office of the architect, Mr. Lawrence Scantlebury, architect and surveyor, Callington. Tenders, marked "Reservoir," to be sent to Mr. G. Parsons, Secretary to the Company, on or before February 28.

MARCH 1.—**Liversedge.**—ROAD WORKS.—Liversedge U.D.C. invite tenders for the various street works required in the improvement of Smithies-lane, together with the erection of new fence walls, the demolition of two houses for street widening, and other incidental work; also for the laying of 700 yds. of 12-in. and 9-in. surface sewers in Norristhorpe-lane, together with necessary manholes, lampholes, ironwork, sandpit, overflow chambers, and other incidental work thereto. Plans, sections, detail drawings, and specification may be seen at the office of Mr. F. Langley, M.S.E., Engineer and Surveyor, Council Offices, Liversedge, and schedule of quantities, together with form of tender, may be obtained upon deposit of 2*l.* 2s. Sealed tenders, endorsed "Tender for Smithies-lane," are to be sent to Mr. Thomas Mitcheson, Solicitor and Clerk, Council Offices, Liversedge, not later than noon on March 1.

MARCH 1.—**London.**—ROADMAKING, KERBING, PAVING, ETC.—Hackney B.C. invite tenders for the kerbing, channelling, paving, making-up, etc., of Daubeney-road (between Ashenden-road and Marshhill). The general conditions of contract and the specification and plans and sections may be inspected, and copies of the bill of quantities and forms of tender obtained, on application to Mr. Norman Scorgie, M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Hackney, N.E., and on payment of the sum of 1*l.* 1s. Tenders, sealed, and endorsed "New Street Works at Daubeney-road," must be delivered personally, or by an authorised representative, to the Borough Council in meeting assembled at 7 p.m. on March 1.

MARCH 2.—**Newburn.**—SEWER.—Newburn U.D.C. invite tenders for the laying of about 160 lin. yds. of 9-in. sewer at Throckley Bank Top and 80 lin. yds. of 8-in. sewer at Walbottle, together with the necessary manholes. Plans and specifications may be seen, and bills of quantities obtained, from Mr. Thomas Gregory, Surveyor, Council Offices, Newburn-on-Tyne. Sealed tenders to be delivered to Mr. George Wilkinson, Clerk, 1, Mosley-street, Newcastle-upon-Tyne, before 12 noon on March 2, endorsed "Tender for Sewers."

MARCH 2.—**Slough.**—SURFACE-WATER SEWERS.—Slough U.D.C. invite tenders for the construction of works of sewerage, comprising about 236 yds. of 18-in. and 192 yds. of 15-in. pipes, surface-water sewers, manholes, etc. Forms of tender and schedule of quantities may be obtained at the office of the Surveyor to the Council, 1, Mackenzie-street, Slough, where the drawings and specification may be inspected on payment of a deposit of 2*l.* cash. Sealed tenders, with all particulars, to be sent in to Mr. G. H. Charsley, Clerk to the U.D.C., 11, Mackenzie-street, Slough, Bucks, in the envelope provided for the purpose, on or before March 2.

MARCH 4.—**Bradfield.**—ROAD REPAIRS.—Bradfield R.D.C. invite tenders for the repair of the district roads in the following parishes:—Bucklebury, Grazeley, Marlston, Sulhampstead Bannister (lower end), Ufton, and Wokefield. A form of the specification and of the contract, and a statement of materials to be expended, may be obtained on application to Mr. John Forrester, District Surveyor, Theale, near Reading. Tenders, marked "District Roads" outside, must be received by Mr. R. E. Rawstorne, Clerk to the Council, 4, Bridge-street, Caversham, near Reading, not later than 12 o'clock noon on March 4.

MARCH 4.—**Porthcawl.**—STREET IMPROVEMENTS.—Porthcawl U.D.C. invite tenders for the execution of works of private street improvement in the following streets, namely:—(1) Railway-terrace, Porthcawl; (2) James-street, Porthcawl; (3) Lifeboat-road, Porthcawl; (4) Williams-place, Porthcawl; and (5) a portion of the Square, Porthcawl. Plans and specification may be inspected, and forms of tender obtained, from Mr. R. W. Jones, the Council's Surveyor, on depositing the sum of 1*l.* 1s. Sealed tenders to be forwarded to Mr. Edward T. David, Clerk, Council Offices, Porthcawl, on or before March 4.

MARCH 4.—**Sheffield.**—RESERVOIR, ETC.—The Electric Light Committee of the City of Sheffield invite tenders for Contract No. 41—Water-storage reservoir, valves, screens, etc., which include excavations, brickwork, concreting, valves, screens, etc., to be carried out on a site in Club Mill-lane, Neepsend, Sheffield. General conditions of contract and drawings may be seen at the offices of Mr. S. E. Fedden, General Manager, Corporation Electric Supply Department, Commercial-street, Sheffield, from whom specification, bill of quantities, schedule of prices, and form of tender may be obtained on making a deposit of 2*l.* 2s. Tenders, sealed, and endorsed "Contract No. 41," to be delivered at the General Manager's Offices not later than 10 o'clock a.m. on March 4.

MARCH 5.—**Elstree, Aldenham.**—SEWERAGE.—Watford R.D.C. invite tenders for the laying of about 370 lin. yds. of 9-in. and 6-in. pipes, together with manholes and other necessary work in connexion with the sewerage of Elstree in Aldenham. Plans and specifications may be seen, and bills of quantities obtained, at the office of the Engineer to the Council, Mr. Ernest Lailey, 9, Market-street, Watford, on payment of 1*l.* 1s. Sealed tenders, endorsed "Tender for Elstree Sewerage," must be delivered at offices of Mr. H. Morten Turner, Clerk to the Council, Watford-place, Watford, not later than 4 p.m. on March 5.

MARCH 5.—**Great Bookham.**—ROAD WORKS.—Epsom R.D.C. invite tenders for the carrying out of certain works or road improvement in the Station-road, Great Bookham. The work includes the building of a dwarf wall, erection of gates and fences, removal and re-erection of sheds, and making-up of roadway. Copies of the specification may be obtained on application to Mr. T. E. Ware, Waterloo-road, Epsom, the Surveyor to the Council, at whose office a plan of the proposed works can be seen. The sum of 5s. must be deposited with the Surveyor when application is made for a copy of the specification. Tenders, marked "Tender for Road Widening," are to be delivered at office of Mr. W. O. Reader, Clerk, "Lonsdale," Epsom, before 6 o'clock p.m. on March 5.

MARCH 5.—**Ladysmith.**—WATERWORKS.—The Corporation of Ladysmith, Natal, invite tenders for the manufacture, supply, and delivery of the following, viz.:—(*a*) About 760 tons of cast-iron pipes and special castings; (*b*) certain sluice and air valves and surface boxes, and test pump on barrow for testing pipes in trenches; (*c*) 369 cwt. of soft pig lead, and 52 cwt. of tar rope, ⅝ in. diameter, for pipe jointing. Specifications, with schedule of quantities for the cast-iron pipes, may be obtained from Messrs. Webster, Steel, & Co., London agents, 5, East India-avenue, Leadenhall-street, London, E.C., on deposit of 2*l.* 2s. Sealed and endorsed tenders to be sent in to agents on or before March 5.

MARCH 6.—**Littlehampton.**—SEWER WORK.—Littlehampton U.D.C. invite tenders for 9-in. pipe sewer work in Pier-road, together with manholes and other works. Drawings and specification can be seen, and forms of tender obtained, on application to the Council's Surveyor, Mr. H. Howard F.S.I., Town Offices. Tenders, under cover, and marked "Pier-road Sewer," to be delivered at office of Mr. Arthur Shelley, Clerk to the Council, Littlehampton, not later than March 6.

✱ MARCH 6.—**London.**—ROAD MATERIALS.—The Commissioners of H.M. Works and Public Buildings invite tenders for the supply of road materials to the Royal Parks, viz.:—Guernsey or Alderney granite, brown Kentish flints, red pit sand, gravel, cockle

shells, screened river sand, and brushed Thames ballast. Forms of tender, containing full particulars, may be obtained at H.M. Office of Works, Storey's-gate, S.W., between 11 and 4. Tenders are to be delivered at the office before 12 noon, March 6, addressed to the Secretary, and marked on the outside "Tender for Road Materials, Royal Parks."

MARCH 6.—**Shepton Mallet.**—WATER SUPPLY.—The Shepton Mallet R.D.C. invite tenders for works of water supply, parishes of Ashwick, Binegar, and Emborough, which include a reservoir 30,000 gallons, three miles of 3-in. main and three miles or smaller branch mains, with sundry fittings. The plans, which have been prepared by Mr. William Phelps, C.E., of Shepton Mallet, the Council's Engineer, are deposited for inspection at the Council's Office, Market-place, Shepton Mallet, where copies of specification and bill of quantities may also be obtained on payment of the sum of 2*l.* 2s. Tenders, on the form provided, to be delivered at office of Mr. A. E. Nalder, Clerk to the Council, Council Offices, Market-place, Shepton Mallet, before 10 a.m. on March 6

* MARCH 6.—**Watford.**—REPAIRS TO ROADS.—The Metropolitan Asylums Board invite tenders for repairs to roads at Leunesden Asylum, Watford, in accordance with drawing and specification prepared by Mr. W. T. Hatch, Engineer-in-Chief. Drawing, specification, conditions of contract, and form of tender may be inspected at the Office of the Board, Embankment, E.C., on and after March 25, and can then be obtained on payment of 1*l.* Tenders, addressed as noted on the form, must be delivered at the Office of the Board, before 10 a.m., March 6.

MARCH 9.—**Baltasound, Shetland.**—WATER SUPPLY.—Estimates are wanted for about eight miles of cast-iron pipes, 3 to 7 in. diameter, including cutting and filling tracks and the construction of a reservoir and storage dams, with other works, in connexion with the water supply of Baltasound, Shetland. The plans and specifications may be seen with Mr. Edmonston, Buness, Baltasound, and also with Messrs. Jenkins and Marr, C.E. and architects, 16, Bridge-street, Aberdeen, who will supply schedules of quantities to intending contractors on deposit of 1*l.* sterling. Sealed tenders, marked "Baltasound W.W.," are to be lodged with Mr. John Sutherland, Clerk to the Local Authority, Uycasound, Shetland, on or before March 9.

MARCH 9.—**Mount Vernon.**—DRAINAGE.—The District Committee of the Middle Ward of the County of Lanark invite tenders for the construction of about 800 lin. yds. of a pipe sewer, 18 in. and 12 in. in diameter, from Foxley to Causewayside-street, Tollcross. Plans may be seen, and copies of the specification and schedule of measurement obtained, at the office of Mr. W. L. Douglass, C.E., District Engineer, District Offices, Hamilton, on payment of 1*l.* Sealed tenders, endorsed on outside "Mount Vernon Drainage," must be lodged with Mr. W. E. Whyte, District Clerk, District Offices, Hamilton, not later than 10 a.m. on March 9.

* MARCH 11.—**Hornsey.**—ROAD WORKS.—The Hornsey T.C. invite tenders for sewering, levelling, paving, metalling, kerbing, channelling, and making good Midhurst-avenue (first section), Muswell Hill. Forms of tender, etc., can be obtained from Mr. E. J. Lovegrove, Borough Engineer, Municipal Offices, Highgate, any morning between 10 and 12. Tenders, on the prescribed form, to be received in the Town Clerk's Office by 4 p.m., March 11.

MARCH 15.—**Cottam.**—SEWAGE WORKS.—Fulwood U.D.C. invite tenders for the carrying out of certain additions to their sewage purification works, situate at Cottam, near Preston, consisting of storm-water filter beds, effluent clarifying beds, laying out land irrigation areas, and other contingent works, according to plans prepared by their Engineer, Mr. Charles J. Lomax, A.M.I.C.E., 37, Cross-street, Manchester. Specifications and bills of quantities may be obtained on the payment of a deposit of 2*l.* 2s., and the drawings inspected at the Engineer's Office as above, on and after March 4 until March 7. The drawings may also be inspected at the Council Offices in Fulwood on March 8, between the hours of 10 a.m. and 4 p.m. Tenders, endorsed "Additional Sewage Purification Works," to be sent to Mr. Arnold Brierley, Solicitor, Clerk to the Council, U.D.C. Offices, Fulwood, near Preston, not later than 10 o'clock on March 15.

MARCH 15.—**Kilkee, Kilrush.**—WATER WORKS.—Kilrush R.D.C., co. Clare, invite tenders (through Post Office) for the construction of an impounding reservoir, having two earthen embankments; by-wash and storm overflow channels, cast-iron supply and service mains, together with valves, hydrants, etc., and all other appurtenant works necessary for the completion of a scheme for the supply of water to the town of Kilkee, co. (West) Clare, on the lands to be provided for this purpose in the townlands of Corbally and Lislaninghan, about 1½ miles from Kilkee. The drawings, etc., and form of tender may be inspected at the District Council Offices, Kilrush, between the hours of 10 a.m. and 4 p.m. daily (Saturday excepted). Tenders, sealed, and endorsed (on the envelopes) "Tender for Water Works," must be addressed to the Chairman of the Council, and must be delivered not later than delivery of first post on March 15.

MARCH 18.—**Abercarn.**—SEWERS.—Abercarn U.D.C. invite tenders for the construction of about 2¾ miles of 12-in., 9-in., and 6-in. subsidiary sewers. Plans, sections, specifications, and quantities may be seen at the office of the Council's Engineer, Market-square, Abercarn, any day by appointment. Tenders, endorsed "Subsidiary Sewers," to be handed in at the Council Offices, Abercarn, on or before 10 a.m. on March 13.

MARCH 20.—**Cardiff.**—RESERVOIR.—Cardiff Corporation invite tenders for the sinking of trial holes on the site of the proposed Reservoir No. 3 (Llwynon) in the Taff Fawr Valley, county of Brecon, 4½ miles from Merthyr Tydfil. Drawings may be seen, and printed specification, form of tender, and other information may be obtained from the Waterworks Engineer, Mr. C. H. Priestley, M.Inst.C.E., City Hall, Cardiff, after March 4, on payment of a deposit of 3*l.* 3s. Sealed tenders, endorsed "Tender for Trial Shafts, No. 3 Reservoir, Cwm Taff," to be delivered at office of Mr. J. L. Wheatley, Town Clerk, City Hall, Cardiff, on or before March 20.

* NO DATE.—**Walthamstow.**—NEW ROAD.—Tenders are invited for the construction of a new road (being a continuation of Beech Hall-road, Higham Park), and a road bridge over the Ching Brook. Specifications and plans may be obtained on application to Messrs. Stanley, Parlner, & Stowers, surveyors, 816, High-road, Tottenham.

STONE, MATERIALS, AND STORES.

FEBRUARY 25.—**Arbroath.**—ROAD MATERIAL.—For quarrying, carting, and breaking the metal required for the Arbroath District roads for one year from Whitsunday next. For further particulars apply to Mr. F. Minto, Road Surveyor. Offers to be lodged with Mr. W. K. Macdonald, Town Clerk, Arbroath, Clerk to the Arbroath District Committee of the County Council of Forfarshire, up to February 25.

FEBRUARY 25.—**Burslem.**—STORES.—Burslem Corporation invite tenders for the supply of materials and goods for the year ending March 31, 1908, as follows:—Macadam and chippings; gravel and gravel bindings; kerbs and setts; paving bricks and quarries; common bricks, etc.; cement; scavengers' brooms, etc.; sanitary pipes and gullies; disinfectants. Particulars and forms of tender may be obtained from Mr. F. Bettany, Borough Engineer and Surveyor, Municipal Offices. Sealed tenders, endorsed "Tender for Stores," to be sent in to the Engineer not later than February 25.

FEBRUARY 25.—**Ellesmere Port.**—CONCRETE FLAGS.—The Ellesmere Port and Whitby U.D.C. invite tenders for the supply of about 3,000 sq. yds. of 2½-in. hand-made concrete flags, composed of best granite chippings and pure cement. Quotations must include delivery on the Shropshire Union Wharf, Ellesmere Port, or at the Ellesmere Port Railway Station. Tenders to be marked "Tender for Flags," and sent so that the same shall reach Mr. J. M. Hudson, surveyor, Bank-buildings, Ellesmere Port, near Chester, not later than 5 p.m. on the date of the Council meeting, viz., February 25.

FEBRUARY 25.—**Manchester.**—MATERIALS.—Manchester Corporation Tramways Committee invite tenders for the supply of (*a*) Assorted iron castings; (*b*) cement; (*c*) chippings and broken stone; (*c*) general stores, comprising the following:—Motor parts and accessories; controllers, resistances, etc.; armature and field coils; fuses, switches, etc.; pinion and gear wheels; trolley poles; incandescent traction lamps; telephones; lighting material and bells; cells for bell circuits; insuating material; carbon brushes and carbons; power and lighting cables; copper, brass, and steel wire; overhead line material, etc.; timber; oils, lubricants, etc.; soaps, disinfectants, etc.; metal polish; paints and varnishes; transfers; gold leaf; linerusta walton; plate glass, etc.; lamp glasses, globes, etc.; porcelain and brownware insulators; crucibles; rubber goloshes, gloves, etc.; leather belting; workshop tools and appliances; handcarts, barrows, etc.; permanent way tools; emery wheels and grindstones; lamps, buckets, cans, etc.; bolts, screws, etc.; sundry ironmongery and brassware; springs; iron and steel; white-bearing metal; tin, lead, etc.; ornamental car platform fences, etc.; sundry wheels and chains; drain boxes; enamelled iron plates; paint and varnish brushes; cleaning and stable brushes; rope, cord, etc.; lamp wicks; bricks, tiles, etc.; lurry sheets. Specifications and forms of tender may be obtained on application to Mr. J. M. McElroy, General Manager, Corporation Tramways, 55, Piccadilly, Manchester. Tenders are to be addressed to the Chairman of the Tramways Committee, 55, Piccadilly, Manchester, and must be received not later than 5 p.m. on February 25.

FEBRUARY 25.—**Penarth.**—ROAD MATERIAL.—Penarth U.D.C. invite tenders for the supply of road metalling and gravel up to March 31, 1908. Tenders to be marked "Tender for Broken Stone and Gravel." Forms of tender and further particulars may be obtained on application from Mr. Edgar J. Evans, A.M.Inst.C.E., Surveyor, District Council Offices, to whom samples and sealed tenders are to be sent not later than noon on February 25.

FEBRUARY 25.—**Radcliffe.**—MATERIALS.—Radcliffe U.D.C. invite tenders for the following materials and for general team labour required during the year ending March 31, 1908:—(1) Portland cement, ground lias lime, pure lime, and limestone chippings; (2) road metal, including granite and limestone macadam; (3) grit setts; (4) Rossendale setts, flags, and kerbs, and concrete flags; (5) coal tar, pitch, and creosote oil; (6) stoneware pipes and gullies; (7) cast-iron manhole and gully grates and lamp pilars; (8) sewage precipitants; (9) waste water closets, best type; (10) carting materials from the railway stations and team labour generally. Forms of tender may be obtained on application to Mr. W. L. Rothwell, Engineer to the Council, and samples inspected at the Town's Yard, Radcliffe. Endorsed tenders, on forms provided, to be delivered to Mr. S. Mills, Clerk to the Council, Council Offices, Radcliffe, not later than by the first post on February 25.

FEBRUARY 25.—**Rugeley.**—GRANITE.—Rugeley U.D.C invite tenders for the supply of 300 tons of 2½-in. granite, to be delivered, carriage paid, at the Canal Wharf, Rugeley. Sealed tenders, endorsed "Tenders for Granite," together with samples of materials, to be sent not later than February 25, to Mr. W. E. Rogers, Surveyor of the Council, Anson-street, Rugeley, from whom further particulars may be obtained.

FEBRUARY 25.—**Sale.**—MATERIALS.—Sale U.D.C. invite tenders for the supply, under contract, during the period ending March 31, 1908, of flags (including concrete), kerbs, grit setts, macadam, granite chippings, limestone chippings and cubes, earthenware pipes, bends, junctions and gullies, manhole covers and other ironwork, blue bricks, disinfectants. Forms of tender and all particulars may be obtained at the office of Mr. William Holt, Engineer and Surveyor, Council Offices, Sale. Sealed tenders, on forms supplied, endorsed "Tender for ——," must be delivered to Mr. D. Hallewell, Clerk to the Council, Council Offices, 4, School-road, Sale, not later than 5 p.m. on February 25.

FEBRUARY 26.—**Cuckfield.**—ROAD METAL, ETC.—Cuckfield R.D.C. invite tenders for the supply of road metal, roadmen's tools, oil, coals for engine, and team labour. Further particulars and forms of tender can be obtained on application to Mr. A. Macarthur, Surveyor, Council Offices, Haywards Heath. Tenders, endorsed "Stores," to be lodged with Mr. C. H. Waugh, Clerk to the Council, Council Offices, Haywards Heath, not later than February 26.

FEBRUARY 26.—**Doncaster.**—GRANITE.—The R.D.C. of Doncaster invite tenders for the supply of dross and granite, with samples, for the whole or part of the roads in the above district, for twelve months, from April 1, 1907. Specifications, schedules, and forms of tenders may be obtained on applying to Mr. W. R. Crabtree, Highway Surveyor of the Council, at the Union Offices, High-street, Doncaster. All tenders to be sent in not later than 9.30 a.m. on February 26, to Mr. F. E. Nicholson, solicitor, Union Offices, Doncaster, Clerk to the above Council.

FEBRUARY 26.—**Durham.**—STORES.—Durham County Lunatic Asylum Visiting Committee invite tenders for supplying the Asylum with such of the following articles as may be required during the half-year commencing on April 1, 1907, viz.:—(4) Glass, oils, paints, varnish, etc.; (5) earthenware; (6) bricks, cement, and lime; (7) fire-bars and blacksmiths' iron; (8) plumbers' materials; (9) brushes, etc. Sealed tenders, addressed to "The Steward, County Lunatic Asylum, Winterton, Ferryhill," and marked on the outside thereof "Tender for Glass" (or as the case may be), must be delivered at the Asylum not later than 12 o'clock at noon on February 26. Forms and conditions of tender may be had on application at the office of the Steward at the Asylum.

FEBRUARY 26.—**Great Yarmouth.**—ROAD MATERIAL.—The Great Yarmouth T.C. invite tenders for the supply of the following road materials:—1,400 tons 1½-in. Guernsey granite; 1,400 tons 1½-in. basalt, quartzite penlee, or other stone of equal value for road-making; 1,500 yds. cube broken flint; 600 yds. cube coarse gravel; 500 yds. cube fine footpath gravel. Specifications, form of tender, and envelopes, in which the tenders must be enclosed, can be obtained at office of Mr. J. W. Cockrill, M.Inst.C.E., Borough Surveyor, Town Hall, Great Yarmouth. Tenders are to be delivered at the office of the Town Clerk, Town Hall, Great Yarmouth, before noon of February 26.

FEBRUARY 26.—**Luddenden Foot.**—MATERIALS.—Luddenden Foot U.D.C. Highway Committee invite tenders for the supply and delivery of the following materials for the twelve months ending March 31, 1908, viz.:—Machine-broken granite; limestone macadam and chippings, setts, flags, kerbs, channelling, etc.; granite setts, 5 in. by 5 in., 4 in. by 5 in., 3 in. by 6 in. Specifications and form of tender may be obtained upon application to Mr. J. Stockwell Botomley, Surveyor, Council Offices, Luddenden Foot. Sealed tenders to be delivered on or before February 26.

* FEBRUARY 26.—**Neasden.**—GRANITE SETTS.—The Willesden D.C. invite tenders for supply of about 500 tons best quality 3 in. by 6 in. granite setts, for paving at Sewage Farm, Dog-lane, Neasden, N.W. Conditions and forms of tender are obtainable on and after February 15, from the Engineer to the Council, Public Offices, Dyne-road, Kilburn, N.W. Tenders to be delivered to the Clerk, Public Offices, as above, not later than 4 p.m., February 26.

FEBRUARY 25.—**Poole.**—MATERIALS.—Poole B.C. invite tenders for execution of work and supply of materials as follows during the year ending March 31, 1908:—(1) General carting; (2) carting material; (4) coarse gravel; (5) kerb and channel; (6) stoneware pipes, gullies, etc.; (7) Portland cement; (8) tools, ironmongery, paint, oils, etc. Tenders are also invited for sewering portion of Ashley-road. Particulars of all the above may be obtained on application to the Borough Surveyor, Mr. Samuel J. Newman, F.R.I.B.A., King-street, Poole, to whom tenders are to be delivered before 9.30 a.m. on February 26.

FEBRUARY 27.—**Aylesbury.**—FLINTS.—Bucks C.C. Highways Committee invite tenders for the supply and delivery of clean hand-picked field flints on main roads during the ensuing spring and summer. Tenders to be forwarded not later than February 27 to Mr. R. J. Thomas, County Surveyor, County Hall, Aylesbury, from whom forms of tender and other particulars can be obtained.

FEBRUARY 27.—**Desborough.**—GRANITE.—The U.D.C. of Desborough invite tenders for the supply of about 500 tons of granite, to be delivered at Desborough Station. Sealed tenders, marked "Tender for Granite," to be sent to Mr. D. J. Diver, Surveyor, Surveyor's Office, on or before February 27, and samples must be delivered free of expense. Further particulars and forms of tender may be obtained from the Surveyor, Desborough.

FEBRUARY 27.—**Shardlow.**—GRANITE, ETC.—Shardlow R.D.C. invite tenders for the supply and delivery at the various railway stations and canal wharves within the district, for the year ending March 31, 1908, of the following, in whole or in part, viz.:—(1) 4,000 tons (more or less) of broken granite; (2) 4,000 tons (more or less) of broken slag; (3) 200 tons (more or less) of broken limestone; (4) dressed York curbing; (5) asphalting and paving within the district. Particulars and forms of tender to be obtained from Mr. John S. Wooddisse, District Surveyor, Aston-on-Trent, Derby, to whom tenders must be forwarded not later than February 27.

FEBRUARY 27.—**Tynemouth.**—WHINSTONE.—Tynemouth R.D.C. invite tenders for the supply of whinstone during the year April 1, 1907, to March 31, 1908, inclusive. Specifications, bills of quantities, and forms of tender may be obtained from Mr. John Waters, District Surveyor, Long Benton, Newcastle-on-Tyne, and sealed tenders must be sent to Mr. Augustus Whitehorn, 60, Saville-street, North Shields, Clerk to the Council, not later than February 27, endorsed "Tender for Whinstone."

FEBRUARY 28.—**Croydon.**—MATERIALS.—Croydon R.D.C. invite tenders for the following:—(1) Broken granite; (2) hand-picked flints, dug flints, and fine gravel; (3) tar-paving; (4) kerbing, pitching, and channelling; (5) chalk lime and grey lime for sewage disposal purposes; (6) Portland cement; (7) carting of highway materials; (8) team labour for scavenging and general purposes; (9) for the supply of brooms, shovels, hammers, picks, gully gratings and frames, manhole covers, lamphole covers, etc.; (10) stoneware pipes and gullies. Forms of tender, specifications, and conditions of contract can be obtained on application to Mr. Ernest John Gowen, Clerk of the Council, District Council Offices, Town Hall, Croydon, and samples of the tools, etc., can be seen at the Vestry Hall, Mitcham, and any other particulars can be obtained by applying to the Surveyor, Town Hall Croydon, or Vestry Hall,

Mitcham. Sealed tenders, endorsed "Tender for ——," must be delivered at the Clerk's Offices, Town Hall, Croydon, before 12 o'clock noon on February 28.

FEBRUARY 28.—**Durham.**—ROAD METAL, ETC.—The C.C. of Durham invite tenders for (1) road metal; (2) cartage and team labour; and (3) steam haulage for the Auckland and Chester Main Road District. Specifications, quantities, and printed forms of tender may now be obtained at the County Surveyor's office, Shire Hall, Durham, where sealed tenders, addressed to Mr. William Crozier, County Surveyor, and endorsed tender for (1) "Road Metal"; (2) "Cartage and Team Labour"; (3) "Steam Haulage," as the case may be, are to be delivered on or before February 28.

FEBRUARY 28.—**Rishton.**—SUPPLIES.—Rishton U.D.C. invite tenders for the following supplies, etc.:—Channels, kerbs, setts, flags, limestone (broken), granite (broken), sanitary pipes, gullies, etc., irregular castings, brushes, etc.; carting stone, etc., from railway station to various parts of the district, as required; removal of nightsoil per load, carting load refuse per day. All information and forms of tender may be obtained at the Council Offices, 4, Church-street, Rishton, where sealed tenders, marked "Tender for Supplies, etc.," must be received by Mr. J. J. Adams, Clerk to the Council, not later than 5 p.m. on February 28.

MARCH 1.—**Birmingham.**—STORES.—Birmingham Corporation Interception Sub-Committee invite tenders for supply of slack, iron and steel ware, belting, timber, brushes, drysaltery, and miscellaneous stores. Samples of the materials required may be inspected at Montague-street Wharf, where also any information can be obtained. Specifications and forms of tender may be obtained on application to the Superintendent, Montague-street Wharf, to whom tenders are to be sent not later than 12 noon on March 1.

MARCH 1.—**Cuckfield.**—ROAD MATERIALS.—Cuckfield R.D.C. invite tenders for the supply of about 5,000 tons of broken granite and tarred slag, and about 1,500 tons of flint. Further particulars and forms of tender may be obtained on application to Mr. A Macarthur, C.E., Surveyor, Council Offices, Haywards Heath. Tenders, endorsed "Road Materials," to be lodged with Mr. C. H. Waugh, Clerk to the Council, Council Offices, Haywards Heath, not later than March 1.

MARCH 1.—**Esher.**—MATERIALS.—The U.D.C. of Esher and the Dittons invite tenders for supplying:—(1) Broken granite, Mendip limestone, granite and limestone chippings, hand-broken flints, coarse and fine Farnham gravel, Coombe gravel and clinkers; (2) lime, cement, stoneware pipes; (3) scavengers' brooms, ironmongery, white lead, and paint; (4) paraffin, colza, and lubricating oils; (7) aluminoferric; (8) disinfectants; (9) tar paving and repairing kerbing work, supply of granite kerbing and setts; (10) horses, carts, and drivers for roadwork and watering, and for dust collection. Forms of tender may be had from the Surveyor at the Council Offices. Tenders must be in envelopes endorsed "Tender for ——," and must be delivered to Mr. E. A. Everett, Clerk to the Council, Council Offices, Brabant Villa, Thames Ditton, not later than noon on March 1.

MARCH 1.—**Great Yarmouth.**—SUPPLIES.—Great Yarmouth T.C. invite tenders for the supply of the following:—(1) Ironmongery; (2) stoneware pipes, bends, gullies, etc.; (3) oils; (4) paints; (5) timber; (6) English timber. Forms of tender, specification, and envelopes can be obtained on application at the Borough Surveyor's office. Tenders, in the envelopes supplied, are to be delivered at the office of the Town Clerk, Great Yarmouth, before noon of March 1.

MARCH 1.—**Heaton Norris.**—SUPPLIES.—The U.D.C. of Heaton Norris invite tenders for the supply and delivery of the undermentioned materials and stores, which they may require during the period of twelve months from April 1, 1907, viz.:—East Lancashire setts, flags and curbs, rough rubble stone, Derbyshire setts, Scotch or Irish granite setts, Clee Hill and Welsh hand-broken macadam, iron manhole and lamp-eye covers and street grids, earthenware and stoneware pipes and intercepting traps, aluminoferric, pitch, creosote oil and tar, shovels and spades, scavenging brushes, horse provender, limestone chippings, artificial stone flags, and cement. Applications for forms of tender, which are to be obtained from Mr. F. W. Brooke, Clerk to the Council, Council Offices, Heaton Moor, should be accompanied by a stamped addressed foolscap envelope. Tenders, sealed and marked "Tender for East Lancashire Setts," or whatever materials they relate to, and addressed to the Chairman of the Highways Committee, should be delivered at offices of Clerk on or before March 1.

MARCH 1.—**Pembroke.**—SUPPLIES.—Pembroke U.D.C. invite tenders for about one year's supply, to March 31, 1908, of the following, in such quantities as the Council may require:—Broken stone (green, whin, or limestone); broken stone (boulder or river stone); broken black stone; shingle; coarse gravel; sand (river); sand (pit); granite stop-cock flags; granite kerbing, crossing blocks, etc.; paving setts; carts (watering, scavenging, gravel, and hand); repairs to carts; brushes, shovels, picks, handles; ironmongery; smith work; sewer pipes (various); cast-iron manhole covers, ventilators, gully traps; lead and other pipes, pig lead, block tin; ferrules, stop cocks; hydrant balls; hydrant rings; plumbing; Portland cement; oils and colours; electricity supplies. No tender will be considered unless it is sent in on the printed form. Forms of tender can be obtained on application at office of Mr. J. C. Manly, Clerk to the Council, Town Hall, Ballsbridge, Pembroke, Co. Dublin, between the hours of 10 a.m. and 12 o'clock noon daily. Tenders, enclosed in sealed envelopes, and marked "Tender for ——," and addressed to the Chairman of the Council, must be delivered at office of Clerk at or before noon on March 1.

* MARCH 1.—**Toronto, Canada.**—CEMENT.—Monterey Waterworks and Sewer Company, Ltd., invite tenders for supply of about 35,000 barrels of cement, and also for 10,000 to 12,000 barrels (for full particulars see advertisement in this issue). Tenders, in duplicate, to be delivered to the British Empire Trust Company, Ltd., Threadneedle House, 28-31, Bishopsgate-street Within, E.C., not later than March 1.

MARCH 2.—**Billesdon.**—GRANITE.—Billesdon R.D.C. invite tenders for the supply, during the year ending March 31, 1908, of granite broken to 2 in., 1½ in., and 1¼ in. gauge, and granite chippings, to be delivered in such quantities and at such times as the Council's Surveyor may from time to time direct, at the railway stations of Leicester (East and Southampton-street), Great Glenn, Kibworth, Tilton, East Norton, Lowesby, Ingarsby, and John o' Gaunt. Sealed tenders (forms of which, giving particulars, may be obtained at office of Mr. W. E. Richardson, Clerk, 18, New-street, Leicester) and samples to be sent to the Workhouse, Billesdon, on or before March 2.

MARCH 2.—**Bolton-upon-Dearne.**—MATERIALS.—Bolton-upon-Dearne U.D.C. invite tenders for the supply of materials for the year ending March 31, 1908, viz.:—Broken granite, granite chippings, rough dross, hand-broken dross, dross screenings, flags, kerbs, setts, channelling, asphalt, pipes, etc. Form of tender may be obtained from Mr. J. Ledger Hawksworth, Clerk, Council Offices, Station-road, Bolton-upon-Dearne, Rotherham. Tenders to be sealed and delivered, and samples of materials forwarded, to the Clerk not later than March 2. Tenders to be endorsed "Materials."

MARCH 2.—**Brandon.**—ROAD METAL, ETC.—Brandon and Byshottles U.D.C. invite tenders for the supply of road metal and cartage of material; also for the supply of disinfectants, oil, aluminer-ferric, etc., and the removal of ashpit and earth-closet refuse, for the year ending March 31, 1908. Forms of tender, etc., may be obtained from Mr. G. W. G. Donkin, Surveyor, Surveyor's Office, Langley Moor, Durham, and should be duly filled in, and endorsed "Tender for Road Metal" or "Cartage," etc., as the case may be, and delivered to Mr. J. G. Wilson, 5, North Bailey, Durham, on or before March 2.

MARCH 2.—**Chingford.**—ANNUAL CONTRACTS.—Chingford U.D.C. invite tenders for the following:—(1) Broken Quenast or Guernsey granite, delivered in trucks at Chingford Station as and when required; (2) for the supply and delivery of stone ballast and hoggin at per yard cube; (3) for the use of steam roller and scarifier and the necessary labour in connexion therewith as and when required, at per day of eight and a half working hours. Forms of tender for granite and gravel may be had on application to Mr. Leonard C. Bowen, Clerk to the Council, 34, Station-road, Chingford, and copies of the several contracts can be seen at the Council Offices between the hours of 9 and 11 a.m. The contracts will be for the twelve months ending March 31, 1908, and all tenders and samples must be delivered at the Council Offices not later than 12 o'clock noon on March 2, and endorsed with the name of the tender.

MARCH 2.—**Gravesend.**—STORES.—Tenders for the following materials for Gravesend T.C., in such quantities as may be from time to time required, between April 1, 1907, and March 31, 1908, namely:—Engine-room stores, meter boards, oilman's sundries, lamp stores, carbons, meters and demand indicators, glass ware. Conditions of tendering and contract may be seen, and specification obtained, at the Electricity Works during office hours. Sealed tenders, endorsed "Tender for ——," must be delivered at the Town Clerk's Office, 147, Windmill-street, not later than March 2.

MARCH 2.—**Maldens.**—MATERIALS, ETC.—Maldens and Coombe U.D.C. invite tenders for supplying the following materials, team labour, etc.:—Road materials—Broken flints to pass a 2½-in. ring, at per ton; Quenast granite to pass a 2-in. ring, at per ton; Quenast granite to pass a 1½-in. ring, at per ton; fine gravel for footpaths, at per ton. Tenders to be sealed and marked "Road Materials." Samples must be submitted. Team labour—Carting material at per ton, and for supplying horse, cart, and man at per day of eight hours. Tenders to be sealed and marked "Team Labour." Ironmongery—For the supply of ironmongery. Samples may be inspected at the Council Offices, New Malden. Tenders to be sealed and marked "Ironmongery." Samples to be sent to the Council Offices, New Malden. Tenders must reach Mr. C. T. Lewis, Clerk to the Council, Council Offices, New Malden, not later than March 2.

MARCH 2.—**Newburn.**—ROAD MATERIAL, ETC.—Newburn U.D.C. invite tenders:—(1) For the leading of road materials required within their district from the various railway stations for the year ending March 31, 1908; (2) for the supply of the following materials during the year ending March 31, 1908:—Granite and whinstone kerbs, whinstone macadam and chippings, limestone macadam, castings, sand, and gravel. Samples of materials tendered for must be sent on or before March 2, to Mr. Thomas Gregory, Surveyor, Council Offices, Newburn-on-Tyne, of whom full particulars may be obtained. Tenders to be sent to Mr. George Wilkinson, Clerk, 1, Mosley-street, Newcastle-upon-Tyne, not later than 12 noon on March 2, sealed and endorsed.

MARCH 2.—**Skelmersdale.**—MATERIALS.—Skelmersdale U.D.C. invite tenders for the twelve months' supply of the following:—(4) For about 90 tons of best and second lime, to be delivered at the railway station; (5) for about 500 tons of best setts, to be not less than 5 in. or more than 6 in. deep, and from 5 in. to 6 in. wide; also for 10 in. by 8 in. kerbs, and 10-in. runners. The above to be delivered at such times and in such quantities as required by the surveyor; (6) for carting material, etc., with one or more horses, with competent drivers, above the age of eighteen, at per day; also at per ton. Tenders to be sent to Mr. Edward Huntington, surveyor, on or before March 2, endorsed "Tenders for Material or Tar."

MARCH 4.—**Carlisle.**—STORES.—Carlisle Gas Committee invite tenders for the supply of the following materials, etc., required at their works during the twelve months ending March 31, 1908, viz.:—Oil for C. W. gas manufacture, oxide of iron, lime, cast-iron pipes, lead and composition pipes, sheet lead, white lead, castings, bar and sheet iron, lubricating oils, cotton waste, engine wipers (white), glass, Portland cement, spun and tarred yarn. Tenders, on forms giving quantities, etc., which will be supplied on application to Mr. W. J. Smith, B.Sc., Engineer and Manager, Gas Works, Carlisle, to be addressed to the Chairman of the Gas Committee, and delivered at the office of the Town Clerk, not later than March 4.

MARCH 4.—**Castle Ward.**—MATERIALS.—The R.D.C. of Castle Ward invite tenders for supplying, quarrying, breaking, leading, and laying on materials required for the several highways in the district, for the year from April 1, 1907, to March 31, 1908. Also for supplying broken whinstone and delivering same at the several railway stations or sidings throughout the district for the same period. Full particulars and forms of tender, with conditions and specifications annexed, may be obtained from the surveyor, Mr. David Hope, Ponteland. Tenders must be received by Mr. George Wilkinson, Clerk to the Council, 1, Mosley-street, Newcastle-upon-Tyne, not later than 12 noon on March 4, and the envelope enclosing same must be marked "Highways Tender," in the bottom left-hand corner.

MARCH 4.—**Chepping Wycombe.**—STORES.—Corporation of Chepping Wycombe invite tenders for the following stores, delivered to High Wycombe Station, during the year ending March 31, 1908:—Cast-iron pipes and specials, galvanised iron tubes and fittings, stopcocks and bibcocks, stopcock and valve boxes, manhole covers and frames, gully grates and frames. Forms of tender and any further particulars may be obtained from Mr. T. J. Rushbrooke, Borough Surveyor and Waterworks Engineer, 77, Easton-street, High Wycombe, to whom tenders, endorsed "Stores," must be delivered on or before March 4.

MARCH 4.—**East Preston.**—FURNITURE, ETC.—East Preston Guardians invite tenders for supplying the new infirmary and nurses' home at the Workhouse at East Preston, near Angmering Station, Sussex, with the undermentioned articles:—(2) Furniture and joinery; (3) blinds and fittings. Lists of the articles required may be had on application to Mr. Arthur Shelley, Clerk to the Guardians, Littlehampton. Tenders, under cover and marked "Furniture," addressed to the "Chairman, Board of Guardians, Workhouse, East Preston, Worthing," should be sent on or before March 4.

MARCH 4.—**King's Norton.**—SUPPLIES, ETC.—King's Norton and Northfield U.D.C. invite tenders for the supply of the undermentioned articles for the stores of the Council, at King's Heath and Selly Oak, during the twelve months from April 1, 1907, to March 31, 1908, or for such other period as the Council may determine:—Class A, asphalting and road materials; class B, brooms, brushes, etc; class D, drysaltery, oils, and paints; class F, fir and other timber; class G, glazed stoneware pipes; class I, iron and steel, castings, tools, etc; class K, kerbs, paving, and other setts, bricks, cement, lime, etc.; class L (1), chemicals, disinfectants, etc.; class L (2), lamps; class M (1), mantles, burners, and requisites for public lighting; class M (2), miscellaneous, packing, yarn, rope, etc. Forms of tender may be obtained, and samples of all goods and materials may be seen, at the office of the Surveyor to the Council, No. 23, Valentine-road, King's Heath, from 2 to 5 o'clock p.m. daily. Tenders, endorsed "Tender for Class ——" (as the case may be), must be sent to Mr. Edwin Docker, Clerk to the Council, 10, Newhall-street, Birmingham, not later than 12 o'clock noon on March 4.

MARCH 4.—**London.**—STORES.—The Madras Railway Company invite, until 12 o'clock on March 4, tenders for the supply and delivery, free on board, of Swedish and British bar iron, steel sheets, plates, hoops and wire, copper, brass, zinc, galvanised iron, tinned and lead sheets, pig lead, copper, brass, and iron wire; tool steel, files, stocks and dies, screw augers, tools for engineers and carpenters, hammers, vices, anvils, crowbars, pickaxes, shovels, chain, bellows, nails, screws, wire netting, lamps, and fittings, copying presses, locks, ironmongery, canvas, bunting, wicks, twine, asbestos, leather, brushes, roofing felt, glass, fog signals, soap, cruicibles, grindstones, hammer handles, tar, fireclay, white and red lead, vermilion, paints, varnish, turpentine, and drysalteries, as per specifications to be seen at the Company's Offices. Tenders to be delivered in sealed envelopes, addressed to Mr. W. H. Cole, Secretary, 1, Broad-street-place, Finsbury-circus, London, E.C., endorsed "Tender for General Stores, Part I." (or Part II., as the case may be). A charge (which cannot be refunded) will be made for each copy of the specification.

MARCH 4.—**Swansea.**—STONE, ETC.—Swansea Corporation invite tenders for the undermentioned stores, work, etc., during the year to end March 31, 1908, viz.:—Ironmongery, tools, iron, etc., oils and grease, paints, etc., india-rubber goods, disinfectants, timber, bricks, pipes, slates, etc., cement and lime, flagging, stone for kerbing, channelling, and pitching, plumbing materials, bass brooms, lamp pillars, copper lanterns, cast-iron gullies, broken syenite (about 3,500 tons), broken limestone (about 2,500 tons), chippings (about 700 tons), gravel (about 1,500 tons), and sand, and for such haulage work as may be required. Forms of tender and further particulars may be obtained at the office of the Borough Surveyor, No. 13, Somerset-place, Swansea. Sealed tenders, endorsed "Tender for ——," to be delivered at office of Mr. Jno. Thomas, Town Clerk, Guildhall, not later than 10 a.m. on March 4.

MARCH 4.—**Swansea.**—PIPES, ETC.—Swansea T.C. invite tenders for the supply of such quantities of cast-iron pipes and castings, steel tubes, water-meters, hydrants, valves, and pipe lead as they may require during a period of twelve months. Printed copies of the specifications and forms of tender can be obtained from the Waterworks Engineer, Guildhall, Swansea. A payment of 1*l.* 1*s.* must be made for the form of tender for cast-iron pipes and castings. Sealed tenders, endorsed "Tender for ——," to be delivered at office of Mr. Jno. Thomas, Town Clerk, Swansea, not later than 10 a.m. on March 4, accompanied, in the case of a tender for pipes and castings, by a cheque for 50*l.* in favour of Town Clerk as a guarantee of the *bond fides* of the tender.

MARCH 4.—**Truro.**—MATERIALS.—Truro City Council invite tenders for the supply of horse hire and materials for the twelve months ending March, 1908, as follows:—Road metalling; glazed socketted earthenware pipes, bends, junctions, gulleys, etc.; granite kerbs, paving, channelling, etc.; iron castings, lamp-pillars, gulley-grids, frames, gratings, etc.; bass and rotary brooms; disinfectants. Specifications, forms of tender, and all other information to be obtained at office of Mr. Measham Lea,

A.M.Inst.C.E., City Surveyor, City Surveyor's Office, Truro. Sealed tenders, upon the forms supplied, suitably endorsed, according to class of goods tendered for, to be delivered at office of Surveyor not later than 10 a.m. on March 4.

MARCH 4.—**Wangford.**—ROAD MATERIALS.—Wangford R.D.C. will be prepared at their meeting on March 4 to receive tenders for such quantities as they may require during the year ending March 31, 1908, of the following materials, not exceeding the quantities respectively hereunder specified, viz.:—Granite (with samples).—To be delivered free at the following places, viz.:—At the Corporation Wharf, at Beccles, 1½ in., 40 tons, 1 in., 20 tons; at the railway station, at Brampton, 1½ in., 200 tons; at the railway station, at Homersfield, 1½ in., 100 tons. Red Broken Flint.—Broken so as to pass through a 2½-in. ring, to be delivered free at the following places, viz.:—At the Corporation Wharf, Beccles, 445 tons; at Ellingham Staithe, 45 tons; at North Cove Staithe, 60 tons. Fine Gravel.—At Beccles Corporation Wharf, 20 tons; at Wortwell Pit, 10 loads. Unbroken gravel.—At Wortwell Pit, 65 loads. Best Fine Marl.—To be delivered free at the following places, viz.:—At the Corporation Wharf, Beccles, 20 tons; at Homersfield Station, 10 tons. Materials of different sizes, or to be delivered at different destinations, may be tendered for separately. The respective contractors must make their own arrangements for freightage to the Staithe at Ellingham with the proprietors, Messrs. W. D. & A. E. Walker, of Bungay. Tenders must be on the forms to be obtained from the Clerk, and must be sent to his office (marked outside "Tender for —") not later than 8 a.m. on March 4.

MARCH 4.—**Westminster.**—MATERIALS.—Westminster City Council invite tenders for the execution of the undermentioned works and the supply of the undermentioned materials, articles, etc., for the twelve months ending March 31, 1908:—Highways Department.—(1) Ballast and sand; (2) brooms and brushes; (4) disinfectants; (5) dust baskets (new and repairs); (6) general timber; (12) miscellaneous oils; (13) painters' materials; (14) plates, sheets, bolts, screws, and sundries; (15) sewer and gully implements; (17) shovels, picks, lamps, tools, etc.; (18) squeegees; (19) tarpaulin (new and repairs); (20) machinery and electrical fittings, etc.; (21) wheelwrights' timber, tool-handles; (22) barging (for one, two, or three years); (23) house refuse removal (for one, two, or three years); (24) re-tyring wheels, repairing springs, etc. Works Department.—(1) Asphalt carriageway repairs; (2) asphalt footways (construction and repairs); (3) ballast and sand for paving; (4) bricks; (5) broken granite; (8) general timber; (9) granite setts, kerb, and channels; (10) iron castings; (11) lime; (12) limewhiting and distempering depôts; (14) minor sewerage and drainage work; (15) painting lamp-posts, etc.; (16) pine and fir (Canadian, Baltic, etc.) paving blocks; (17) pitch and creosote oil; (18) Portland cement; (19) sandstone flags; (20) seeds, bulbs, etc., and garden sundries; (21) sett-paved carriageway repairs (trenches); (22) shovels, picks, and edge tools; (23) steam road-roller and scarifier (hire of); (24) painting, etc., at public urinals; (25) street gullies (construction of brick and stoneware); (26) street nameplates (providing, fixing, painting, etc.); (27) street masons' work; (29) tree guards, plates, sheets, bolts, screws, etc.; (30) wood-paved carriageway repairs (ordinary); (31) wood-paved carriageway repairs (trenches); (32) painting, varnishing, etc., at public conveniences and lavatories; (33) painting, etc., at public gardens and open spaces; (34) painting tree guards; (36) flat granite channelling (supplying and laying); (37) stoneware goods; (38) gas and hot-water fittings; (39) draughtsmen's materials. Specifications and forms of tender may be obtained on application at the Town Clerk's office, Westminster City Hall, Charing Cross-road, W.C., between the hours of 10 a.m. and 4 p.m. (Saturday, 10 a.m. and 12 noon). Each tender, on the official form supplied, is to be delivered at the City Hall in a sealed cover, addressed to the "Town Clerk, Westminster City Hall, Charing Cross-road, W.C.," and marked with the name of the tender. No tender will be received after 9 a.m. on March 4.

MARCH 4.—**Whitley.**—STONE, ETC.—Whitley and Monkseaton U.D.C. invite tenders for the following:—(*a*) The supply of whinstone, broken and unbroken, for the repair of the roads of the district, during the year from April 1, 1907, to March 31, 1908, inclusive; (*b*) the supply of slag, broken and unbroken, for the same purpose and period; and (*c*) the team labour in connexion with the work on the streets and roads of the district during the same period. Specifications can be seen, and form of tender obtained, on application to Mr. John Moore, Surveyor, Council Offices, Whitley Bay. Tenders to be sent in to Mr. Augustus Whitehorn, Clerk to the Council, 60, Saville-street, North Shields, on or before March 4, at noon, endorsed as tender for each supply or work.

MARCH 5.—**Battersea.**—MATERIALS.—Battersea B.C. invite tenders for the supply of the undermentioned materials for the Electricity Department for one year from March 31 next:—(1) Oils; (2) engine-room stores; (4) carbons for arc lamps; (5) electricity meters; (6) service joint boxes; (7) ironmongery, tools, etc. Forms of tender may be obtained of the Electrical Engineer, Electric Light Station, Lombard-road, and no tender will be considered unless made on such forms. Tenders, sealed, and endorsed "Tender for —" must be delivered to Mr. W. Marcus Wilkins, Town Clerk, Town Hall, Battersea, by 3 o'clock on March 5.

MARCH 5.—**London.**—STORES.—Great Central Railway Company invite tenders for the supply during the twelve months ending April 30, 1908, of the undermentioned stores and materials, viz.:—(1) Ambulance materials; (2) asbestos, etc., packing; (3) baskets, brushes, and mats; (4) brass sheets and tubing and tin sheets; (5) bricks, fire, crucibles, etc.; (7) canvas; (8) carriage trimmings; (9) carriage and waggon fittings; (10) chain, iron; (13) colours, dry and ground in oil, etc.; (14) cordage, flax, and oakum; (15) drysaltery; (16) electric light materials; (17) files; (18) fire appliances; (19) flocks, woollens, bunting, etc.; (20) glass, plate; (21) glass, plate, embossed; (22) glass, sheet; (23) glass, lenses, etc.; (24) gas and water fittings, brass; (25) gas fittings, incandescent; (26) gas fittings, iron; (27) gold leaf; (28) hardware; (29) hinges; (32) iron; (33) keys, tree-nails, fencing, tool shafts, buffer bars, and navvy barrows; (34) lamp fittings; (36) lime, cement, and salt; (37) locks, etc.; (38) nails; (39) oil, tar, pitch, and turpentine; (40) oil for gasmaking, paraffin, petroleum, etc.; (41) oil, linseed; (42) oil, lubricating for locomotives; (43) pipes, earthenware drain, etc.; (44) screws—coach, bolts, washers, rivets, etc.; (45) screws, iron and brass, wood; (46) signals, fog; (47) signal materials; (48) slag, broken, etc.; (49) slates; (51) spouting, etc.; (52) steel plates, angles, etc.; (53) sundry tools; (54) telegraph materials; (55) tracing paper, cloth, etc.; (56) tubes, iron and steel boiler; (57) varnish; (59) wire. Samples and patterns can be seen from February 25 to March 4, inclusive, between the hours of 9 a.m. and 5 p.m. (Saturday 9 a.m. to 12 noon), on application to Mr. A. W. Longden, the storekeeper, at Cornwall-street, Openshaw (near Gorton Station), from whom also specifications and forms of tender can be obtained. Applicants are requested to state the particular class of stores for which they wish to tender. Sealed tenders, endorsed "Tender for —," to be in the hands of Mr. Oliver S. Holt, Secretary, Marylebone Station, London, N.W., not later than 10 a.m. on March 5.

MARCH 5.—**Rochester.**—MATERIALS.—Rochester Corporation invite tenders for the supply of the undermentioned materials, viz.:—1,540 cubic yds. pit flints; 2,500 cubic yds. brick rubbish; 145 yds. 12-in. stoneware pipes; 310 yds. 9-in. pipes; 310 yds. 6-in. pipes; forty Wakefield's patent stoneware street gullies. Specifications and form of tender can be obtained of Mr. William Banks, A.M.Inst.C.E., City Surveyor, Guildhall, Rochester. Sealed tenders, endorsed "Tender for Materials," are to be delivered at office of Mr. Apsley Kennette, Town Clerk, before 4 o'clock on March 5.

MARCH 5.—**Tottenham.**—MATERIALS.—Tottenham U.D.C. invite tenders for the supply of the following for one year:—(1) road materials; (2) lime and cement; (3) disinfectants. Specifications and forms of tender can be obtained on application to Mr. Edward Crowne, Clerk of the Council, at the Council Offices, The Green, Tottenham. Persons tendering will be required to deposit with the Treasurer when handing in their tenders, in a Bank of England note or cash, the sum of 5*l*. Sealed tenders, on the form supplied, endorsed "Tender for (as the case may be)," to be delivered to the Clerk by 12 o'clock noon on March 5.

MARCH 5.—**Woodford.**—GRANITE, ETC.—Woodford U.D.C. invite tenders for the supply of small granite, and tar and pitch for tar paving. Particulars and forms of tender may be obtained from Mr. William Farrington, Surveyor to the Council, Council Offices, Woodford Green. Sealed tenders, endorsed "Tender for —," as the case may be, to be sent in not later than noon on March 5.

MARCH 6.—**Gravesend.**—STORES.—The T.C. of Gravesend invite tenders for materials and goods appertaining to the trades of engineers, ironmongers, blacksmiths, oilmen, cement manufacturers, builders, contractors, carpenters, printers, etc., for one year, from April 1 next. Lists of materials and goods, conditions of tendering and contract, may be seen at the office of the Borough Treasurer, Town Hall, during office hours. Samples may be seen at the offices of the Town Clerk, Borough Treasurer, Borough Surveyor, and Sanitary Inspector, and at the Police-station respectively. Tenders, marked with the name of the trade to which they relate, must be delivered at the Town Clerk's office, 147, Windmill-street, before 9 a.m. on March 6.

MARCH 6.—**Leeds.**—MATERIALS.—The Tramways Committee of the Leeds City Council invite tenders for the supply of the following material during the year ending March 31, 1908:—(1) Bolts, nuts, and washers; (2) brushes (including paint brushes); (3) cotton waste, wipers, and sponge cloths; (4) chemicals, acids, etc.; (5) electrical sundries; (6) engineers' furnishing (drills, pliers, and other tools); (7) files; (8) glass; (9) iron and steel (including chains and tread iron); (10) iron and steel castings; (11) ironmongery; (12) malleable iron castings; (13) oils, grease, etc.; (14) paints, varnishes, and transfers; (15) plumbers' material (including tubes and fittings; (16) ropes and twines; (17) soaps and metal polish; (18) tool steel. Tenders are also required for the purchase of scrap metal, including copper, brass, iron, and steel. Also for river sand, which must be clean and sharp, delivered at Kirkstall-road Depôt. Samples showing quality must be sent with tender. Conditions of contract and tender forms may be obtained on application to Mr. J. B. Hamilton, General Manager, Tramways Office, City-square, Leeds. Sealed tenders, marked "Tramways Tender for General Stores," "Tramways Tender for Sand," "Tramways Tender for Scrap Metal," to be delivered to Mr. R. H. Fox, Town Clerk, at the Tramways General Office, City-square, Leeds, not later than March 6.

MARCH 6.—**London.**—ROAD MATERIALS.—The Commissioners of H.M. Works and Public Buildings are prepared to receive tenders for the supply of road materials, viz.:—Guernsey or Alderney granite, brown Kentish flints, red pit sand, gravel, cockle shells, screened river sand, and crushed Thames ballast. Forms of tender, containing full particulars, may be obtained at H.M. Office of Works, Storey's-gate, S.W., between the hours of 11 and 4. The tenders are to be delivered at office of H.M. Office of Works, etc., before 12 o'clock noon on March 6, addressed to the Secretary, and marked on the outside "Tender for Road Materials, Royal Parks."

MARCH 6.—**Northampton.**—STONE.—Northampton R.D.C. invite tenders for the supply of Hartshill, Groby, Tuttle Hill, Mount Sorrel, and other granite and slag, broken to a 2-in., 1½-in., and 1-in. gauge, and unbroken, and free from chippings, and also price for chippings, to be delivered at the following places, in such quantities and at such times, previous to November 1 next, as the District Surveyor shall direct, viz.:—About 2,000 tons, to be delivered in different quantities at Billing Station, 360 tons; Northampton Castle, 500; Bughrooke Wharf, 450; Stowe Hill Wharf, 60; Heyford Wharf, 350; Weston Mill, 150; Wright's-lane Bridge, 60. The whole of the quantities must be delivered before November 1 next. The tenders, including carriage and wharfage to the above places, mut be delivered at the office of Mr. W. Tomalin, Clerk, 14, Guildhall-road, Northampton, with samples, carriage paid, before 10 a.m. on March 6, addressed "To the Chairman of the Northampton R.D.C. Tenders for Stone, etc."

MARCH 6.—**Wetherby.**—ROAD MATERIAL.—Wetherby R.D.C. invite tenders for broken whinstone, bluestone, granite, and dross; also tar macadam, to be delivered free at the following stations in quantities as required by the surveyor:—Wetherby, Spofforth, Pannal, Weeton, Arthington, Leeds (North-Eastern or Midland), Marston, Marsh-lane, Thorner, Bardsey, Collingham, Newton Kyme, Thorparch, Tadcaster, Cattal, Copmanthorpe, and Scholes, for the year ending March, 1908. Marked samples to be sent to Mr. Wiseman, Wetherby, Surveyor to the Council, and tenders forwarded to Mr. E. H. Coates, Clerk to the said Council, Wetherby, not later than March 6.

MARCH 7.—**Greenwich.**—GRANITE.—Greenwich Guardians invite tenders for a cargo of about 350 tons Channel Island granite spalls for stone-breaking, Grove Park Workhouse, Lee. Forms of tender can be obtained on application at the Clerk's Office, Woolwich-road, Greenwich, and must be delivered by noon on March 7.

MARCH 8-22.—**Tadcaster.**—STONE, ETC.—The R.D.C. of Tadcaster invite tenders for carting stone and other material from the various railway stations and wharves to and in the various parishes throughout the district at per ton and per day for one and two horses; also tenders for the supply of broken granite or whinstone, blue limestone, slag, and blue limestone tar-macadam, and for stores, for the year ending March 31, 1908. Forms, upon which tenders only will be accepted, may be obtained from Mr. Thos. Scott, the Council's Surveyor, Aberford, Leeds, and will be sent by post on receipt of stamped addressed envelope. Samples of materials and stores to be forwarded to the Union Workhouse, Tadcaster. Sealed tenders, endorsed "Tender for Stone" or "Stores," to be sent in not later than March 8, and "Tender for Carting" not later than March 22, to Mr. Geo. A. Bromet, solicitor, Clerk to the Council, Tadcaster.

MARCH 9.—**Levenshulme.**—MATERIALS.—The U.D.C. of Levenshulme invite tenders for the supply and delivery of the undermentioned materials and stores for the year ending March 31, 1908, viz.:—6-in. Lancashire setts, 3-in. best and seconds Barns flags, 12 in. by 8 in. kerbs, artificial stone flags, iron manhole and lamp-eye covers, street grids, best salt-glazed earthenware sewer and drain pipes and intercepting traps, ½ in. and ¾ in. limestone chippings, pitch, creosote, oil and tar, lubricating oils, coal and coke shovels, spades, scavenging brushes, carbolic disinfecting powder, team labour, and horse provender, delivered at the Council's stables, Levenshulme. Specification and form of tender may be obtained from Mr. James Jepson, 8a, Tiviot-dale, Stockport, Surveyor to the Council. Tenders, sealed and endorsed "Tender for Stores," to be sent to Mr. J. Ogden Hardicker, Clerk to the Council, Council Offices, Levenshulme, on or before March 9.

MARCH 9.—**Manchester.**—MATERIALS.—Manchester Corporation Withington Committee invite tenders for the supply of the undermentioned materials, for the period of twelve months ending March 31, 1908, viz.:—Highways and Sewers Departments.—Paving setts, kerbstones, and flags, from the quarries at Rawtenstall, Stacksteads, or neighbourhood; hard Welsh granite, broken and unbroken, for road metal; pitch, tar, and creosote; oil for dust-laying purposes; limestone chippings, lime, and cement; scavenging brushes; picks, tools, etc.; glazed stoneware and fireclay sewerage pipes, junctions, bends, gullies, grids, and traps, manhole covers and other ironwork. Cleansing Department.—Galvanised iron dust bins; cement and granite chippings for making artificial flags. The tenders must be accompanied by samples of the materials quoted for, sent in convenient form, and delivered at the Committee's Offices, carriage paid. Applications for further particulars and forms of tender should be accompanied by a stamped addressed envelope, and addressed, as regards the Highways and Sewers Departments, to "The Surveyor, Town Hall, West Didsbury, Manchester," and for the Cleansing Department to "The Cleansing Superintendent," at the same address. Tenders to be endorsed "Tenders for Materials," and addressed to "The Chairman of the Withington Committee, Town Hall, West Djdsbury," on or before March 9.

MARCH 11.—**Barnes.**—ANNUAL CONTRACTS.—The U.D.C. of Barnes invite tenders for the supply of the following for the twelve months ending April 1, 1908:—(1) Broken Guernsey granite; (2) broken flints and Thames' ballast; (3) horses and carts on hire; (4) smith's work; (5) ironmongery, etc.; (6) removal of refuse by barges; (7) Portland cement; (9) granite kerb and channel; (10) paving slabs; (11) oils, paints, etc.; (12) stoneware pipes, etc. Particulars and forms of tender may be obtained of the Engineer and surveyor, at the Council House, High-street, Mortlake, S.W., where tenders, sealed, and endorsed "Tender for Granite," "Tender for Flints," etc., must be sent in not later than 12 o'clock noon on March 11.

MARCH 12.—**Southall.**—ANNUAL CONTRACTS.—Southall-Norwood U.D.C. invite tenders for the supply of:—Granite (Guernsey and Leicestershire); lime (Clay Cross and grey lime); cement; oils (Price's gas-engine oil, paraffin, waste, press cloth, etc.); aluminoferric; disinfectants (carbolic powder and acids, sulphur dioxide); tools, etc. (picks, shovels, brooms, broom handles, pick shafts); flints and hoggin; gravel; horse hire (for scavenging, removal of house refuse, street watering, and cartage); steam rolling and scarifying; forage. Forms of tender and particulars can be obtained from Mr. Reginald Brown, A.M.Inst.C.E., Engineer and Surveyor, Public Offices, Southall, Middlesex. Tenders, sealed, and endorsed "Tenders for —," are to be delivered at the Council Offices not later than 4 p.m. on March 12.

MARCH 13.—**London.**—STORES.—St. Marylebone B.C. invite tenders for the following stores:—(1) engine-room stores; (2) rubber cables and fireproof tape, cable jointing and materials; (3) ironmongery; (4) timber; (5) installation fittings; (6) incandescent lamps; (7) box compound and pitch; (8) bricks and cement; (9) fire bricks and fireclay; (11) carbon brushes; (12) dynamo brushes; (13) iron and lead piping; (14) mica; (15) arc lamp carbons; (16) valves; (17) castings (iron and gun-metal); (18) fuses. General conditions, schedule, and form of tender may be obtained of Mr. F. A. Wilkinson, Resident Electrical Engineer and Manager, 19 and 20, York-

place, W. Sealed tenders, endorsed "Tender for Stores," are to be addressed and delivered to Mr. James Wilson, Town Clerk, Town Hall, Marylebone-lane, W., not later than 4 o'clock on March 13.

MARCH 13.—**Walsall.**—MATERIALS.—The R.D.C. of Walsall invite tenders for the supply of the following materials from April 1, 1907, to March 31, 1908:—(1) Broken furnace slag; (2) broken granite; (3) machine and paraffin oils; (4) castings; (5) bricks; (6) cement; (9) disinfectants; (10) stoneware pipes, etc. Forms of tender may be obtained at the office of Mr. W. P. Young, District Surveyor, Council Offices, Rushall, Walsall. Tenders, endorsed "Supply of Materials," to be sent in, along with samples, carriage paid, not later than March 13.

MARCH 14.—**Eastbourne.**—STONE, ETC.—Eastbourne R.D.C. invite tenders for the supply of road materials (stone, flints, and chippings stone), and for cartage of same from railway stations. Tenders to be sent, on the forms provided by the Council, to the chairman of the R.D.C., to reach the Board-room of the Eastbourne Guardians, Avenue House, Eastbourne, not later than 12 o'clock noon on March 14, and marked "Tender for ——." Forms of tender may be obtained from Mr. T. E. Varley Kirtlan, Clerk to the Council, 92, Terminus-road, Eastbourne, or Mr. C. M. Carter, Down View, Polegate, on forwarding stamped, addressed, foolscap envelope.

MARCH 14.—**Reading.**—STORES, ETC.—Reading Corporation invite tenders for the supply for a term of one year ending March 31, 1908, of the following stores and works, viz.:—(1) Granite and other stone for macadam; (2) Norwegian granite kerb and channel; (3) paving setts (paving); (4) wood blocks for street paving; (5) gravel and Thames ballast; (6) lime, cement, and glazed stoneware drain pipes; (7) lamp standards, lanterns and ladder irons; (8) cast-iron gullies and gratings, sewer manhole frames and covers; (10) bass, rotary, and other brooms and brushes; (11) petroleum and other oils, paint, etc.; (12) tools and ironmongery, etc.; (13) flints. Forms of tender on application at office of Mr. John Bowen, Assoc.M.Inst.C.E., Borough Engineer and Surveyor, Town Hall, Reading. Separate sealed tenders, on forms supplied, for each class of goods, suitably endorsed according to the class of goods, etc., must be delivered not later than 12 o'clock on March 14.

MARCH 15.—**Wimbledon.**—ANNUAL CONTRACTS.—Wimbledon Corporation invite tenders for the supply and execution, during the year ending March 31, 1908, of the following materials, works, etc., namely:—Borough Surveyor's Department—(1) Broken granite; (2) granite kerbs and quadrants; (3) granite cubes and pitchings; (4) flints and fine binding gravel; (5) concrete, gravel, and sand; (6) iron castings; (7) brooms, brushes, baskets, ropes, and turnery; (8) street gullies and drain pipes; (9) Portland cement; (10) lime; (13) tools; (14) ironmongery; (15) paints, colours, and varnish; (16) timber in bulk; (17) timber in small quantities; (18) wheelwrights' timber; (25) tyreing of wheels. Forms of specification and tender, with conditions of contract, may be obtained on application to the Borough Engineer and Surveyor, Town Hall, Wimbledon. Electricity Department—(1) Engine-room stores; (2) cables and conduits; (3) joint boxes and jointing material; (4) transformers; (5) meters; (6) oils; (7) incandescent electric lamps, carbons, and accessories; (8) castings; (9) firebricks and fireclay. Forms of specification and tender, with conditions of contract, may be obtained, and samples inspected, on application to the Chief Electrical Engineer, Electric Light Works, Dunrsford-road, Wimbledon. Sealed tenders, endorsed "Tender for ——," must be addressed to Mr. A. Steele Sheldon, Town Clerk, Town Clerk's Office, Wimbledon, and delivered before noon on March 15.

MARCH 18.—**Formby.**—STORES.—Formby U.D.C. Highways Committee will meet on March 18 to consider tenders for contracts for one year from April 1, 1907, as under:—(1) Macadam and chippings; (2) Haslingden or Yorkshire setts; (3) concrete flags; (4) Portland cement; (5) pitch and tar; (6) glazed stoneware drain pipes; (7) cast-iron ventilating pipes; (8) cast-iron street gullies; (9) bass brooms. Forms of tender and copies of the specification and conditions may be obtained at the Clerk's office during office hours. Sealed tenders, to be endorsed "Annual Contracts," to be in hands of Mr. E. H. Bond, Clerk to the Council, Council Offices, Formby, not later than 10 o'clock a.m.

MARCH 20.—**Wem.**—MATERIALS, ETC.—Wem R.D.C. invite tenders for the supply of materials, cartage, and team labour, for the year ending March 31, 1908:—(1) Granite, basalt, and slag, delivered to the various wharfs and stations in the district; (2) cartage of materials from the wharfs and stations; (3) general team labour. Further particulars, conditions of contracts, and form of tender can be obtained from Mr. Percy R. Francis, Surveyor, Crescent, Wem. Tenders to be delivered at the office of Mr. W. S. Salt, Clerk to the Council, Wem, on or before March 20.

NO DATE.—**Gainsborough.**—ROAD METAL.—The R.D.C. of Gainsborough invite tenders for the supply of road metal—about 10,000 tons of granite and tar macadam and about 1,000 tons of slag—for the parishes within the above district. Specifications, particulars, and forms of tender may be obtained on application to Mr. Richard Maxwell, Surveyor, Lea-road, Gainsborough.

NO DATE.—**Salford.**—MATERIALS.—Salford Corporation invite tenders for the supply of the following materials, in such quantities as may from time to time be required, between March 31, 1907, and March 31, 1908, viz.:—Barns flags, grit setts, and grit curbs; granite setts and broken granite for macadam; sanitary pipes, traps, etc.; Portland cement; cast-iron work; pitch and creosote oil; lubricating and other oils; leads, paints, and varnish; timber; soft and other soaps, common soda; waste; ironmongery; lime and limestone chippings; weed brooms; plumbers' materials and plumbers' work. Specifications, forms of tender, and all requisite information may be obtained at the Borough Engineer's office, Town Hall, Salford. Sealed tenders, accompanied by samples, must be endorsed as directed, and be delivered to the Borough Engineer, Town Hall, Salford, at the time stated on the form of tender.

Auction Sales.

Nature and Place of Sale.	By whom Offered.	Date of Sale.
*BUILDER'S PLANT, MACHINERY, AND STOCK, WALTHAMSTOW—On the Premis s ...	Fuller, Horsey, Sons, & Cassell	Feb. 27
*BLDR.'S IRONMONGERS, ETC., GOODS—At the Mission Hall, Collingwood st., Blackfriars	J. F. Edwardes	do.
*WOODWORKING MACHINERY, TIMBER, ETC.—Godwin-street, Coventry	J. T. Skelding	do.
*FREEHOLD STEAM BRICKWORKS, CLACTON-ON-SEA—Corn Exchange, Colchester	Sexton & Grimwade	March 2
*TIMBER, 103, LAVENDER-HILL, BATTERSEA—On the Premises	Joseph Hibbard & Sons	March 4
*FREEHOLD BUILDING ESTATE, STAMFORD HILL—At the Mart	David Burnett & Co.	March 6
*FREEHOLD BUILDING SITE, HAMPSTEAD-ROAD—At the Mart	Edwin Fox & Bousfield	do.
*CONTRACTOR'S PLANT AND MACHINERY, HUTTON, ESSEX—On the Site	Frederick Warman	March 7
*FREEHOLD BUILDING SITE, 177-187, WHITECROSS-STREET—At the Mart	Morton, Trist, & Gilbert	March 11
*LEASEHOLD SAW MILLS, PLANT AND MACHINERY, STRATFORD—At the Mart	J. T. Skelding	March 13
*BUILDERS' MERCHANT'S STOCK, PLANT, ETC.—On Premises, Kingsland-road, N.E.	J. T. Skelding	March 14
*FREEHOLD BUILDING SITE, BOROUGH MARKET—At the Mart	Furbers	March 19
*SLATE-WORKING PLANT, ETC., HARROW-ROAD, W.—On the Premises	Fuller, Horsey, Sons, & Cassell	March 21
*FREEHOLD BUILDING LAND, HARROW-ROAD—At the Mart	Farebrother, Ellis, Egerton, Breach, Galsworthy, & Co.	do.
*FREEHOLD BUILDING ESTATE, WILLESDEN—At the Mart	Hampton & Sons	March 25
*FREEHOLD PROPERTY, EAST SHEEN—At the Mart	Farebrother, Ellis, Egerton, Breach, Galsworthy, & Co.	April —

LEGAL.—*Continued from page 236.*

to the state of the tide varied from 15 to 25 ft. in depth. The defendants contended first that the discharge of the logs from the ship's rail into the water was not a delivery to them within the meaning of the charter party, and, secondly, that the tally made by the ship of the number of logs and deals discharged was unreliable and wrong.

His Honour was of opinion that the tally made by the ship both of the logs and deals was correct as to the number which left the ship. The ship discharged her cargo in the customary manner, and her liability so far as the logs were concerned ceased as soon as she had raised them by her tackle to the ship's rail and shot them into the space of water prepared for their reception by the defendants. He was of opinion that the deals taken by the plaintiffs from the ship duly reached the quay—their proper place of delivery. No account of the deals was made by the defendants until from time to time during the period of three weeks from delivery portions were required by them for delivery to customers. Upon the findings his judgment would be for the plaintiffs for the amount claimed, with costs on the claim, and for the plaintiffs (Messrs. Neilson & Sons) on the counterclaim.—*Liverpool Post.*

Patents of the Week.

APPLICATIONS PUBLISHED*.

24,105 of 1905.—W. FAWCETT, Senr., W. FAWCETT, Junr., and C. BERCHER: *Formation of Abrasive Tools and Blocks for Stone working and the like purposes.*

THIS relates to an abrasive tool or block composed of carborundum, corundum, emery, or the like, in combination with a binding agent, the purpose of which is to hold the particles or granules of carborundum or like tightly together.

1,533 of 1905.—C. R. SLATER: *A Water-tight Ridge Strap and Nail for Roofs.*

This relates to a piece of galvanised iron or other metal bent to the shape of a ridge with a collar or projection round the nail holes. The nails are formed with a screw thread three-fourths up from the point, and the top is made with a cap so as to fit closely round the outside of the collar of the nail-hole when driven in.

1,679 of 1906.—J. T. COPE: *Apparatus for Heating or Cooling Purposes by the Condensation of Steam or by Currents of Hot or Cold Liquids, Air or other Gases through or around Pipes or Tubes.*

This relates to the construction of metallic tubes with deep indentations or furrows formed longitudinally in or upon the upper part of the tubes, the said indentations or furrows being inclined radially towards the lower part of the tube section which is segmentally left plain for any deposit that may form or into which the contents of or the liquids arising from condensation in the upper part of the tubes drain, to facilitate cleaning and emptying.

3,102 of 1906.—S. E. MOORE: *Taps or Cocks.*

This relates to a tap, and consists in the combination of a casing, a conical seating in the casing, the said seating opening into a nozzle, a ball resting in the said seating and in the cup-like termination of a stem, the said stem being attached to a bar which can be raised against pressure and held for the time being in such a raised position by pins working in bayonet joints.

5,446 of 1906.—J. N. MASKELYNE: *Registering Door Locks.*

This relates to lavatory door locks provided with counting mechanism, and consists in the employment of a pivoted latch, two levers also pivoted, projections on the said levers for raising the said latch separately by the said levers, means for connecting the counting mechanism to one of the levers and a spring pawl arranged to catch under the said counting mechanism lever and prevent its taking up a position to operate the counting mechanism until released by the lifting of the other lever by the attendant's key.

5,659 of 1906.—P. R. J. WILLIS (A. A. FORBES): *Machines for Moulding Building Blocks.*

This relates to a machine for moulding building blocks, comprising moulds constructed of separate parts, trucks arranged to travel on rails at each side of said moulds and carrying an overhead bridge frame, shafts longitudinally journalled in said bridge frame and carrying rollers having depending winding cables and hooks whereby the separable parts of the moulds can be raised when desired, a traveller carried by the bridge frame to raise and move into position buckets containing cement or the like for filling the mould, and means such as winch-handles, sprockets and chains for conveying motion to the lifting mechanism and traveller.

15,211 of 1906.—A. FREDERIKSEN: *Draw-off Tap or Outlet Valve.*

This relates to a self-closing draw-off tap or valve, and consists of a case, an annular freely-turning handle and cup connected to a discharge pipe, the latter being connected to a plug by a cross bar, which plug closes a cylindrically-formed valve so that by pushing the handle up on the case the plug is lifted and the liquid allowed to flow, and when dropping the handle, the movable parts descend slowly and without noise, thereby closing the valve and discharge pipe again.

15,397 of 1906.—H. G. COLLINGRIDGE and BECK & Co., LTD.: *Taps or Valves.*

This relates to taps or valves of the class in which the valve is raised from its seat against

* All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

liquid pressure, and consists of a valve-chamber, means within said chamber for guiding the valve with or without a spring to assist its closing, a short projection on the valve immediately below its seating, a cone adapted to make contact with said projection, and a screw spindle for operating the cone, and so located as to be out of the line of flow of the liquid.

16,156 of 1906.—W. C. FAIRWEATHER (RUSSELL & ERWIN MANUFACTURING COMPANY): *Lock and Latch Mechanism.*

This relates to lock and latch mechanism, and consists in the arrangement of a retractable bolt operated by knob mechanism, with a member to dead-lock the bolt so that the bolt cannot be retracted by the outer knob, and an automatic stop mechanism to prevent the operation of the dead-lock member when the door is closed.

10,592 of 1906.—W. BURTON: *Chimney and Ventilating Shaft Tops.*

This relates to chimney tops or ventilating-shaft tops, and consists in the combination of a body, openings therein around its lower part, inclined wings, an inverted cone or pyramid or a plate, and a hood or cowl leaving passages between it and the upper part of the body or a prolongation thereof.

11,629 of 1906.—H. L. DOULTON and R. J. PLEACE: *Waste Fittings for Lavatories, Sinks, and the like vessels.*

This relates to waste fittings for lavatories, and the like, and consists of two sockets fixed to the lavatory top, or in any other convenient position, into which the coned extremities of a length of brass wire fits. The central portion of the wire is so bent as to form an arm capable of engaging easily with the lavatory plug. In the bending sufficient spring is allowed that there may be a constant pressure upon the sockets so that as the wire is turned upwards the friction may be great enough to prevent a return of the plug unless manipulated by the person using the lavatory.

12,054 of 1906.—R. W. H. RODNEY: *Door Springs and Checks.*

This relates to door springs and checks, and consists in the employment in combination in a suitable case of a boss around the door pivot having means for connexion to a spring or springs arranged to return the door to its closed position with a brake in the case, comprising a block bearing evenly on the whole surface of the boss with a spring pressure admitting of regulation.

13,270 of 1906.—W. P. THOMPSON (D. SCHUYLER): *Automatic Door-openers.*

This relates to automatic door-openers in which a push arm is operated from a treadplate on one or both sides of the door, and consists in arranging the push arm as a bell-crank lever, and connecting the same to the treadplate or plates by means of flexible connexions guided by suitable pulleys.

8,808 of 1906.—A. MITCHELL: *Draught or Weather Excluders for Doors, Windows, and the like.*

This relates to draught or weather excluders for doors and the like, and consists in providing the bottom of the casing in which the door opens with a slotted recess the width of the door, and in which a strip of brass or other metal or material is employed which is capable of automatically rising up from the level of the floor, so that when the door is closed the said strip is caused to rise up out of its slot and thus present itself in front of the bottom of the closed door so as to exclude any draught or water passing under the door. The strip is provided at the one end thereof with a wheel or roller which is capable of rotating above the top thereof. The hinging side of the door at the lower part thereof is provided with a metal plate, and the arrangement is such that in closing the door the said plate is caused to bear against the roller at a point below its axis so that it causes the strip to be elevated, the strip rising up with a parallel movement in its slot under the influence of guides the bottom of the door being checked ¼ in. or so to receive the rising strip. On opening the door the strip, which is fixed to the hinging side of the door, is withdrawn from the roller and allows the metal strip to fall of its own weight into its recess so that the top of the strip is flush with the level of the floor. The guides for the strip preferably take the form of inclines, that is to say, the lower part of the strip is formed with three or more inclined projecting pieces which bear upon corresponding inclined metal pieces inverted within the slot of the door, so that the metal strip rises on the inclines as it is drawn to the one side by the striking of the door plate against the roller and falls on the inclines by its own weight when the door plate is withdrawn from the roller.

19,291 of 1906.—J. LIDDLE (VOIGTMANN & Co.): *Gravity Lock or Catch for Windows.*

This relates to a gravity lock or catch for windows, comprising a window frame and sash provided respectively with a locking-dog and a stop, the dog being pivoted at its outer end and engaged at its inner end by the stop and supported thereby in a locking position, together with a manually-operable releasing device for releasing engagement between the dog and the stop, the releasing device being provided with two portions, one for releasing said dog from engagement with the stop, and the other portion adapted to engage a suitable stationary part to assist in opening the window.

20,474 of 1906.—E. J. NOWELL: *Apparatus for use in Cleaning and Mending Windows, Painting, Decorating, and the like.*

This relates to an apparatus for use in cleaning, mending, and painting windows and the like, consisting of a tubular collapsable or expanding and contracting rod or bar provided with hinged rods or supports having spiked feet or flanges for causing the said rod or bar to expand and force its ends against the sides of the window frame by means of the weight of a person standing on a board suspended by hooks and rods or chains from the said rod or bar.

22,078 of 1906.—C. H. DARBISHIRE: *Means for Securing Hardened Steel Rolls and the like to the Shafts of Crushing Machinery, Specially Applicable to Stone-crushing Machinery.*

This relates to a method of attaching rolls to shafts in which each section of the roll is independently secured to its carrier by hinges fitting in key beds for the carriers and having key ways to take the driving teeth of the rolls.

22,402 of 1906.—E. E. VAN WIE: *Interlocking Tubular Bricks.*

This relates to a hollow section tubular brick for building purposes, and consists of a tube having its ends longitudinally and radially slotted, the slots extending approximately one-quarter of the length of the tube, and being in the same lines at each end.

28,782 of 1906.—R. TIERCELIN: *Locks.*

This relates to a lock for doors of water-closets and the like, in which the bolt is controlled in opposite directions by two independent knobs, one on the interior and one on the exterior, and by a locking member which prevents the lock being operated by the exterior knob when the lock is shut by the interior knob, the arrangement being such, however, that when the lock has been shut by the exterior knob, the bolt pushes the locking member aside and nothing prevents the opening of the door when required.

1,464 of 1906.—A. VAN BODEGOM: *Reinforced Concrete.*

This relates to reinforced concrete, and consists in pouring into a wooden or other suitable mould a liquid mixture of crushed stone and Portland cement. When the mould is full iron rods or bars are put in. The mass is allowed to harden, and is then ready for use.

8,498 of 1906.—S. FOREMAN and R. DRAKE & GORHAM, LTD.: *Form of Coupling for Use with Conduits and Pipes.*

This relates to a pipe coupling for the iron, steel, or like pipes used for the conduits of electric leads, having two coupling members adapted to draw the slightly splayed-out end of the pipe to its contacting surface so as to make a water-tight and good electrical joint.

8,704 of 1906.—D. SMITH: *Expanding Testing Plugs for Drain Pipes.*

This relates to an expansible drain-testing plug, consisting of a rubber ring, two compressing plates with diagonal abutments and circumferential lips to grasp the ring, a central seating-up bolt and nut, and an outlet underneath the bolt.

3,893 of 1906.—H. GATTSCHALK (G. ALB): *Glazed Roofs.*

This relates to glazed roofs and consists in using hollow iron sash bars having internal zinc or other soft metal troughs or supports for the glass, and being themselves supported on rounded stirrups or brackets attached to the sash-bar troughs.

12,655 of 1906.—W. W. BANNISTER and W. J. MANNING: *Construction of and Arrangement of Palisadings, Gates, or the like Fencing.*

This relates to the construction and arrangement of palisadings, gates, or the like fencing, and consists in the combination of blocks adapted to receive upright and horizontal members, with means for locking the same by one of said horizontal members.

21,572 of 1906. A. J. BOULT (C. WEBER): *Reinforced Concrete Structures.*

This relates to a metal reinforcing bar for metal concrete construction, and is characterised by the provision of longitudinal wings, the spaces between adjacent wings being concavely curved in cross-section, and the bars having longitudinal recesses at intervals in opposite wings. The wings have their bases expanded laterally, thus forming abrupt end shoulders projecting beyond the adjacent surfaces of the unrecessed portion of the said wings.

TO CORRESPONDENTS.

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Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED

All communications must be authenticated by the name and address of the sender whether for publication or not. No notice can be taken of anonymous communications.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance. The Editor cannot undertake to read and consider articles offered for acceptance unless they are type-written.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and not to the Editor.

SOME RECENT SALES OF PROPERTY

ESTATE EXCHANGE REPORT.

February 7.—By BARNARD & CO. (at Notting Hill).

Bayswater.—76, Ledbury-rd., u.t. 39 yrs., g.r. 8*l.* 8s., e.r. 50*l.*	£390
36, Cornwall-rd., u.t. 52 yrs., g.r. 13*l.*, y.r. 50*l.*	380

February 11.—By ARTHUR BARTON.

Lee.—62, Burnt Ash-hill, u.t. 60 yrs., g.r. 9*l.* 10s., e.r. 60*l.*	395

By CARTWRIGHT & ETCHES.

Pimlico.—69, Cambridge-st., u.t. 24 yrs., g.r. 8*l.*, e.r. 65*l.*	425
23 and 28, Denbigh-pl., u.t. 23½ yrs., g.r. 16*l.*, e.r. 140*l.*	980

By TOMKINS & CHADWICK (at Blaenavon).

Waenavon, Monmouth.—Waen Mary Gunter Farm, 8 a. 1 r. 18 p., *f.*	495

February 12.—By C. W. DAVIES & SON.

Hoxton.—18, 20, 22, and 24, Whitmore-rd., u.t. 12 yrs., g.r. 31*l.* 8s., w.r. 124*l.* 16s.	190

By MARGETTS, TOWNLY, & KENNEDY.

Brondesbury.—19, Hanover-rd., u.t. 94 yrs., g.r. 6*l.* 16s., y.r. 40*l.*	450
Kensal Rise.—4, Chevening-rd., u.t. 92¾ yrs., g.r. 8*l.*, w.r. 63*l.* 14s.	550

By BATE & CO., (at Kilburn).

Hampstead.—50, Belsize-rd., u.t. 38 yrs., g.r. 7*l.*, y.r. 45*l.*	185
St. John's Wood.—130, Alexandra-rd., u.t. 51 yrs., g.r., 4*l.*, y.r. 65*l.*	280
38, Clifton-hill, u.t. 31 yrs., g.r. 10*l.*, y.r. 65*l.*	360

PERKINS & SON (at Southampton).

Southampton.—20, Commercial-rd. (s.), *f.*, y.r. 27*l.*	520

February 13.—By G. TROLLOPE & SONS.

Belgravia.—19, Wilton-st., u.t. 17 yrs., g.r. 5*l.*, p.	1,700

February 14.—By EDWIN EVANS.

Peckham.—Albert-rd., etc., f.g. rents 47*l.* 18s. 6d., reversion in 39¾ yrs.	1,460
Plumstead.—High-st., f.g.r. 9*l.*, reversion in 4¾ yrs.	1,600
High-st., f.g.r. 3*l.* 16s., reversion in 15 yrs.	460
High-st., f.g. rents 29*l.* 16s., reversion from 19½ to 32¼ yrs.	1,220
West Ham.—Neville-rd., f.g.r. 8*l.*, reversion in 60¾ yrs	170
Croydon.—London-rd., f.g. rents 30*l.*, reversion in 48 yrs.	1,050
75, Gloucester-rd. (s.), *f.*, y.r. 30*l.*	350

By EDWIN EVANS.

South Lambeth.—Thurlow-st., f.g.r. 5*l.* 10s., reversion in 47½ yrs.	170
Hackney.—307 and 309, Hackney-rd. (s.), *f.*, y.r. 104*l.*	1,740
60, 62, and 64, Brunswick-st., *f.*, y.r. 92*l.* 6s.	910
Hoxton.—Hoxton-st., f.g. rents 100*l.*, u.t. 20 yrs., g.r. 45*l.*	590
Edmonton.—18 to 24, 24A, 25, and 25A, Holmvillas, u.t. 98¼ yrs., g.r. 40*l.*, w.r. 340*l.* 6s.	1,200
Bermondsey.—Oxley-st., f.g.r. 21*l.*, reversion in 49¾ yrs.	300

By FAREBROTHER, ELLIS, & CO.

West Kensington—32, Edith-rd., u.t. 68¼ yrs., g.r. 12*l.*, y.r. 65*l.*	550
1, Glazbury-rd., u.t. 69¼ yrs., g.r. 15*l.*, e.r. 90*l.*	750
9, Gwendwr-rd., u.t. 69½ yrs., g.r. 12*l.*, y.r. 80*l.*	600

By H. S. HAWLEY & CO.

Bethnal Green.—53 and 55, Mape-st., *f.*, w.r. 63*l.* 14s.	600
Stoke Newington.—3, Hayling-rd., u.t. 65 yrs., g.r. 5*l.* 10s., e.r. 34*l.*	315
21, Mayville-st., u.t. 52 yrs., g.r. 5*l.*, w.r. 39*l.*	280
Stamford Hill.—17, Candler-st., u.t. 81 yrs., g.r. 5*l.* 5s., w.r. 39*l.*	180

By NEWBON, SHEPHARD, & EDWARDS.

Willesden.—Chaplin-st., f.g. rents 10*l.*, reversion in 73 yrs.	235
Hackney.—Orchard-pl., f.g. rents 23*l.*, u.t. 31½ yrs., g.r. 2s.	260
Islington.—30, Cloudesley-st, u.t. 10 yrs., g.r. 8*l.*, y.r. 52	135

By WILLIAM WESTON.

Paddington.—72, Market-st., u.t. 15½ yrs., g.r. 3*l.*, y.r. 55*l.*	320
16 and 18, Hampden-st., u.t. 38 yrs., g.r. 10*l.*, y.r. and w.r. 67*l.* 12s.	470
Marylebone.—80, Balcombe-st., u.t. 14 yrs., g.r. 10*l.*, e.r. 50*l.*	300
20, Church-st. (s.), u.t. 14 yrs., g.r. 10*l.*, e.r. 55*l.*	125
Harrow-st., f.g. rents 18*l.* 18s., u.t. 13 yrs., g.r. nil	113

West Kensington.—33, Maclise-rd., u.t. 70 yrs., g.r. 15*l.*, e.r. 70*l.* £510

By FLOOD & SONS (at Harrow-road).

Paddington.—25, Grittleton-rd., u.t. 55¾ yrs., g.r. 10*l.*, e.r. 55*l.* 470
5, Waverley-ter., u.t. 42 yrs., g.r. 5*l.*, p. 280

By STEPHENSON & ALEXANDER (at Cardiff).

Porthcawl, Glam.—Seabank House Estate, 16 a. 2 r. 17 p., f. 6,200
Coedpenmaen, Glam.—The Post Office, u.t. 70 yrs., g.r. 5*l.* 16s. 11d., y.r. 40*l.* 730

February 15.—By F. CHILD.

New Barnet.—Richmond-rd., "Park View" and ¾ acre, f., p. 1,010
Lyonsdown-rd., "Hill Crest" and 1 a., f., y.r. 100*l.* 1,360

By ELLIS & SON.

City.—1, New London-st., area 1,050 ft., f., y.r. 425*l.* 5,000

By HIND & SONS.

Canning Town.—65, Forty Acre-la. (s.), u.t. 91 yrs., g.r. 8*l.* 8s., y.r. 40*l.* 230

By PERCIVAL HODSON.

Caledonian Road.—43, Freeling-st., u.t. 38 yrs., g.r. 5*l.*, w.r. 44*l.* 4s. 205

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold; c. for copyhold; l. for leasehold, p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. beerhouse; p.h. for public-house; o. for office; s. for shops; ct. for court.

MEETINGS.

FRIDAY, FEBRUARY 22.

Architectural Association.—Mr. Gerald C. Horsley on "Some Aspects of Training and Design." 7.30 p.m.

Glasgow Architectural Craftsmen's Society.—Paper by Mr. J. Flett, entitled "Practical Points in Works Inspection." 8 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. G. Newman on "Duties of a Sanitary Inspector—Offensive Trades." 7 p.m.

Institution of Civil Engineers (Students' Meeting).—Mr. F. E. Walker on "Impurities in Boiler Feed-water; their Nature, Effect and Elimination." 8 p.m.

SATURDAY, FEBRUARY 23.

Builders' Foremen and Clerks of Works' Institution.—Annual dinner, King's Hall, Holborn Restaurant. 6 p.m.

Royal Sanitary Institute (Demonstration for Sanitary Officers).—Inspection at Tottenham Disinfecting-station and Dust Destructor. 2.30 p.m.

Royal Institution.—Professor J. J. Thomson on "Röntgen, Cathode, and Positive Rays."—II. 3 p.m.

Architectural Association.—Spring visit to Gloucester House, Park-lane, by permission of Messrs. Collcutt and Hamp. 2 p.m. A visit afterwards to Hamilton House, Park-lane, by permission of Messrs. Romaine-Walker and Besant.

Junior Institution of Engineers.—Visit the Rotherhithe Tunnel Works. 3 p.m.

MONDAY, FEBRUARY 25.

Royal Academy (Lectures on Architecture).—Professor R. T. Blomfield, A.R.A., on "Design and Temperament." 4 p.m.

Society of Arts (Cantor Lectures).—Mr F. Hamilton Jackson on "Romanesque Ornament."—I. 8 p.m.

University of London (Imperial Institute-road).—Mr. Banister Fletcher on "Palaces and Houses of the Romans." 8 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. A. Bostock Hill on "Infectious Diseases." 7 p.m.

Surveyors' Institution.—Mr. A. J. Spencer on "The Agricultural Holdings Act (1906)." 8 p.m.

TUESDAY, FEBRUARY 26.

Royal Sanitary Institute (Lectures for Sanitary Officers).—Dr. A. Bostock Hill on "Methods of Disinfection." 7 p.m.

University College.—(A course of ten lectures, arranged in conjunction with the London County Council, on "Seven Ages of Architecture," by Professor F. M. Simpson). VII.—"Mediæval (Gothic)." 8 p.m.

Institute of Sanitary Engineers.—Students' Lecture. 7 p.m. "Supervision of Works in Progress," by Professor Henry Adams.

Institution of Civil Engineers.—Mr. Dugald Clerk on "The Limits of Thermal Efficiency in Internal-Combustion Motors." 8 p.m.

WEDNESDAY FEBRUARY 27.

Royal Sanitary Institute (Lectures and Demonstrations for Sanitary Officers).—Dr. A. Bostock Hill on "Elementary Statistics." 7 p.m. Demonstration on Waste-Preventers and Water-closets 6 p.m.; and inspection at the London County Council Municipal Lodging House, Kemble-street, Drury-lane, W.C. 2.30 p.m.; and at Messrs. Callard, Stewart, & Watts' Bakery, Little Dean-street, Soho. 4 p.m.

Institution of Civil Engineers.—Students' visit to the Locomotive Works of the London and South-Western Railway, Nine Elms, S.W. Assemble at the Loco. and Stores Dept. Gate, Wandsworth-road. 2.30 p.m.

THURSDAY, FEBRUARY 28.

Royal Institution.—Dr. W. Martin on "Old Dutch Painting and Painters."—I. 3 p.m.

Royal Academy (Lectures on Architecture).—Professor R. T. Blomfield, A.R.A., on "Architecture and the Craftsman." 4 p.m.

FRIDAY, MARCH 1.

Royal Sanitary Institute.—Professor R. Ross, F.R.S., D.Sc., on "Points of Interest Connected with Tropical Sanitation," illustrated by lantern slides. 5.30 p.m.

Royal Sanitary Institute (Lectures for Sanitary Officers). Dr. E. J. Steegmann on "Elementary Physics." 7 p.m.

Institution of Mechanical Engineers.—An extra meeting, to continue discussion on "The Eighth Report to the Alloys Research Committee, on the Properties of Alloys of Aluminium and Copper." By Professor H. C. H. Carpenter, M.A., Ph.D., and Mr. C. A. Edwards. 8 p.m.

SATURDAY, MARCH 2.

Royal Sanitary Institute.—Discussion on "The Bacterial Treatment of Sewage, with Special Reference to the Biolysis of Organic Nitrogen," to be opened by Mr. W. D Scott-Moncrieff. 11 a.m.

Royal Sanitary Institute (Demonstration for Sanitary Officers).—Inspection at the Battersea Disinfecting Station, Mortuary, and Shelter. 2.15 p.m.

Royal Institution.—Professor J. J. Thomson, M.A., on "Röntgen, Cathode and Positive Rays."—III. 3 p.m.

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PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks	1 8 0	per 1000 alongside, in river.
Rough Stocks and Grizzles	1 6 0	" " "
Picked Stocks for Facings	2 10 0	" delivered
Flettons	1 8 0	" at railway depôt.
Red Wire Cuts	1 14 0	" " "
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire	3 15 0	" " "
Do. Bullnose	4 0 0	" " "
Best Stourbridge Fire Bricks	3 14 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	12 0 0	" " "
Headers	11 0 0	" " "
Quoins, Bullnose, and Flats	16 0 0	" " "
Double Stretchers	19 0 0	" " "
Double Headers	16 0 0	" " "
One Side and two Ends	19 0 0	" " "
Two Sides and one End	20 0 0	" " "
Splays, Chamferred, Squints	20 0 0	" " "
Best Dipped Salt Glazed Stretchers, and Header	12 0 0	" " "
Quoins, Bullnose, and Flats	14 0 0	" " "
Double Stretchers	15 0 0	" " "
Double Headers	14 0 0	" " "
One Side and two Ends	15 0 0	" " "
Two Sides and one End	15 0 0	" " "
Splays, Chamferred, Squints	14 0 0	" " "
Second Quality White and Dipped Salt Glazed	2 0 0	" less than best.

	s. d.	
Thames and Pit Sand	7 0	per yard, delivered.
Thames Ballast	5 6	" "
Best Portland Cement	28 0	per ton, "
Best Ground Blue Lias Lime	19 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime ..... 11s. 6d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 0d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8½	" "
PORTLAND STONE (20 ft. average)—Brown Whitbed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 1	" "
White Basebed, delivered on road waggons, Paddington Depôt, Nine Elms Depôt, or Pimlico Wharf	2 2½	" "

	s. d.	
Ancaster in blocks	1 10	per ft. cube, deld. rly. depôt
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks	2 4	" "
Red Corsehill "	2 2	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "
YORK STONE—*Robin Hood Quality.*		
Scappled random blocks	2 10	" "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super., "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
HARD YORK—		
Scappled random blocks	3 0	per ft. cube, "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 8	per ft. super., "
6 in. rubbed two sides ditto	3 0	" "

STONE (*continued*).

	s. d.	
HARD YORK (*continued*)—		
3 in. sawn two sides slabs (random sizes)		per ft. super. delivered rly. depôt.
2 in. self-faced random lags	0 5	" "

SLATES.

In. In.	£ s. d.	
20×10 best blue Bangor	13 2 6	per 1000 or 1200 at rly. depôt
20×12 " "	13 17 6	
20×10 first quality "	13 0 0	" "
20×12 " "	13 15 0	" "
16×8 " "	7 5 0	" "
20×10 best blue Portmadoc	12 12 6	" "
16×8 " "	6 12 6	" "
20×10 best Eureka unfading green	15 17 6	" "
20×12 " "	18 7 6	" "
18×10 " "	13 5 0	" "
16×8 " "	10 5 0	" "
20×10 permanent green	11 12 6	" "
18×10 " "	9 12 6	" "
16×8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles	42 0	per 1000 at rly. depôt
Hip and Valley tiles	3 7	per doz. "
Best Broseley tiles	50 0	per 1000 "
Do. Ornamental tiles	52 6	" "
Hip and Valley tiles	4 0	per doz. "
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	" "
Do. Ornamental do.	60 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 0	" "
Best Red or Mottled Staffordshire do. (Peakes)	51 9	per 1000 "
Do. Ornamental do.	54 6	" "
Hip tiles	4 1	per doz. "
Valley tiles	3 8	" "
Best "Rosemary" brand plain tiles	48 0	per 1000 "
Best Ornamental tiles	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 8	" "
Best "Hartshill" brand plain tiles, sand-faced	50 0	per 1000 "
Do. pressed	47 6	" "
Do. Ornamental do.	50 0	" "
Hip tiles	4 0	per doz. "
Valley tiles	3 6	" "

WOOD.

BUILDING WOOD.	At per standard. £ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in.	13 10 0	... 15 0 0
Deals: best 3 by 9	13 0 0	... 14 0 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 0 0	... 12 0 0
Battens: best 2½ by 6 and 3 by 6	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less than best.
Battens: seconds	0 10 0	" "
2 in. by 4 in. and 2 in. by 6 in.	9 0 0	... 10 0 0
2 in. by 4½ in. and 2 in. by 5 in.	8 10 0	... 9 10 0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"

JOINERS' WOOD.	At per standard.	
White Sea: first yellow deals, 4 in. by 11 in.	24 0 0	... 25 0 0
3 in. by 9 in.	22 0 0	... 23 0 0
Battens, 2½ in. and 3 in. by 7 in.	16 10 0	... 18 0 0
Second yellow deals, 3 in. by 1 in.	18 10 0	... 20 0 0
" " 3 in. by 9 in.	17 10 0	... 19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	... 14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	13 10 0	... 15 0 0
Battens, 2½ in. and 3 in. by 7 in.	11 0 0	... 12 0 0
Petersburg first yellow deals, 3 in. by 11 in.	21 0 0	... 22 10 0
Do. 3 in. by 9 in.	18 0 0	... 19 10 0
Battens	13 10 0	... 15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	... 17 0 0
Do. 3 in. by 9 in.	14 10 0	... 16 0 0
Battens	11 0 0	... 12 10 0
Third yellow deals, 3 in. by 11 in.	13 0 0	... 14 0 0
Do. 3 in. by 9 in.	12 10 0	... 14 0 0
Battens	10 0 0	... 11 0 0
White Sea and Petersburg— First white deals, 3 in. by 11 in.	14 10 0	... 15 10 0
" " 3 in. by 9 in.	13 10 0	... 14 10 0
Battens	11 0 0	... 12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	... 14 10 0
" " 3 in. by 9 in.	12 10 0	... 13 10 0
" " battens	10 0 0	... 11 0 0
Pitch-pine: deals	18 0 0	... 21 0 0
Under 2 in. thick extra	0 10 0	... 1 0 0
Yellow Pine—First, regular sizes	44 0 0	upwards.
Oddments	32 0 0	"
Seconds, regular sizes	33 0 0	"
Yellow Pine oddments	28 0 0	"
Kauri Pine—Planks, per ft. cube	0 3 6	... 0 5 0
Danzig and Stettin Oak Logs— Large, per ft. cube	0 3 0	... 0 3 6
Small " "	0 2 6	... 0 2 9
Wainscot Oak Logs, per ft. cube	0 5 6	... 0 6 0
Dry Wainscot Oak, per ft. sup. as inch	0 0 8½	... 0 0 9½
¾ in. do. do	0 0 7	... —
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch	0 0 9	... 0 1 0
Selected, Figury, per ft. super. as inch	0 1 6	... 0 2 6
Dry Walnut, American, per ft. super. as inch	0 0 10	... 0 1 0
Teak, per load	17 0 0	... 22 0 0
American Whitewood Planks, per ft. cube	0 4 0	... 0 5 0

WOOD (*continued*).

JOINERS' WOOD (*continued*)—

Prepared Flooring, etc.—	Per square. £ s. d.	£ s. d.
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15	0 16 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0	0 13 6
1 in. by 7 in. " "	0 14 0	0 18 0
¾ in. by 7 in. white " "	0 10 0	0 11 6
1 in. by 7 in. " "	0 12 9	0 15 0

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	7 7 6	7 15 0
Compound Girders, ordinary sections	9 10 0	10 10 0
Steel Compound Stanchions	12 5 0	13 5 0
Angles, Tees, and Channels, ordinary sections	9 5 0	10 5 0
Flitch Plates	9 5 0	10 5 0
Cast Iron Columns and Stanchions including ordinary patterns	8 0 0	9 0 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	8 10 0	9 0 0
Staffordshire Crown Bars, good merchant quality	9 5 0	9 15 0
Staffordshire "Marked Bars"	11 0 0	—
Mild Steel Bars	9 10 0	9 15 0
Hoop Iron, basis price	9 15 0	10 0 0
" " Galvanised	17 10 0	—
("And upwards, according to size and gauge.)		
Sheet Iron Black—		
Ordinary sizes to 20 g.	10 0 0	—
" " 24 g.	11 0 0	—
" " 26 g.	12 10 0	—
Sheet Iron, Galvanised, flat, ordinary quality—		
Ordinary sizes, 6 ft. by 2 ft. to 3 ft. to 20 g.	16 0 0	—
Ordinary sizes to 22 g. and 24 g.	16 10 0	—
" " 26 g.	17 0 0	—
Sheet Iron, Galvanised, flat, best quality—		
Ordinary sizes to 20 g.	19 0 0	—
" " 22 g. and 24 g.	19 10 0	—
" " 26 g.	21 0 0	—
Galvanised Corrugated Sheets—		
Ordinary sizes 6 ft. to 8 ft. by 2 ft. to 3 ft. by 20 g. and thicker	13 0 0	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	13 0 0	—
Best Soft Steel Sheets, 22 g. & 24 g.	14 0 0	—
" " 26 g.	16 0 0	—
Cut Nails, 3 in. to 6 in.	10 15 0	11 5 0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Per ton, in London. £ s. d.	£ s. d.
LEAD—Sheet, English, 3lb. and up.	22 12 6	—
Pipe in coils	23 2 6	—
Soil pipe	25 2 6	—
Compo pipe	25 7 6	—
ZINC—Sheet—		
Vieille Montagne ton	34 5 0	—
Silesian	34 0 0	—
COPPER—		
Strong Sheet per lb.	0 1 4	—
Thin "	0 1 5	—
Copper nails "	0 1 3	—
BRASS—		
Strong Sheet "	0 1 2	—
Thin "	0 1 3	—
TIN—English Ingots "	0 1 11	—
SOLDER—Plumbers' "	0 0 9	—
Tinmen's "	0 0 11½	—
Blowpipe "	0 1 1	—

ENGLISH SHEET GLASS IN CRATES OF STOCK SIZES.

15 oz. thirds	2½d. per ft. delivered.
" fourths	1¾d. " "
21 oz. thirds	3¼d. " "
" fourths	2¼d. " "
26 oz. thirds	4¼d. " "
" fourths	3¼d. " "
32 oz. thirds	5d. " "
" fourths	4¼d. " "
Fluted Sheet, 15 oz.	3¼d. " "
" 21 oz.	4¼d. " "

ENGLISH ROLLED PLATE IN CRATES OF STOCK SIZES.

Hartley's	2½d. per ft. delivered.
"	2¾d. " "
"	3d. " "
Figured and Oxford Rolled	" "
"Oceanic" Glass, white 4d.	
Do. " tinted 5½d.	" "

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 1 11
" " " in barrels	"	0 2 0
Boiled " " in drums	"	0 2 2
" " " in pipes	"	0 2 1
" " " in barrels	"	0 2 2
Turpentine in barrels	"	0 2 4
" in drums	"	0 4 3
Genuine Ground English White Lead	per ton	0 4 6
Red Lead, Dry	"	26 0 0
Best Linseed Oil Putty	"	24 10 0
Stockholm Tar	per cwt.	0 7 0
	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TENDERS.

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

ABERDEEN.—For supplying and laying cast-iron pipe drain in Holburn-street and Garthdee-road, for the Town Council. Mr. W. Dyack, Burgh Surveyor, Town House, Aberdeen:—
Gall & Walker, Richmond-street, Aberdeen* £715 14 1

BEAMINSTER.—For waterworks (contract No. 2), for the Rural District Council. Messrs. Beesley, Son, & Nichols, engineers, 11, Victoria-street, Westminster, S.W.:—

B. Cooking	£3,717 0 0
A. G. Osenton	3,606 7 0
S. W. H. Anison & Co.	3,450 0 0
F. Munford & Son	3,408 7 3
E. Tabor	3,309 6 9
Coston & Co., Ltd.	3,285 0 0
Davies, Ball & Co.	3,187 1 0
R. H. B. Neal, Ltd.	3,065 19 3
H. Ashley	2,995 0 0
A. J. Cottle	2,971 16 0
T. Pollard & Co., Ltd.	2,947 10 3
O. T. F. Dunn	2,910 18 11
Steer & Pearce	2,903 12 2
A. Streeter & Co.	2,897 6 2
Meredith Bros.	2 800 0 0
W. W. Hayward	2,800 0 0
Chick Garden & Co., Ltd.	2,760 3 10
J. W. Dean, Ltd.	2,715 17 0
F. Osman	2,713 0 0
Jenking & Son	2 713 18 2
H. A Cunninghan	2,614 0 0
F. H. Macdonald, 63, Battersea-road, Oxford*	2,514 0 0

BROADSTAIRS.—For proposed pair of villas, Dickens-road, Broadstairs, for Mr. S. Nash. Mr. W. Leonard Dowton, architect, City Bank-chambers, Bedford-row, W.C., and at Broadstairs:—

E. Brown	£1,085	H. Goodburn	£900
W. W. Martin	980	G. H. Fuggle	896
J. H. Forwalk	975	J. T. May*	889
E. G. Holbourn	956	G. Miriams	799
Price Bros.	940		

[Architect's estimate, £900.]

BURY ST. EDMUNDS.—For a covered grand stand to accommodate 3,500 persons, for the Grand Stand Committee, Bury St. Edmund's Pageant. Mr. W. D. Harding, A.M.Inst.C.E., Town Hall, Bury St. Edmunds:—

J. D. Pitcher & Son	£1,906	E. Willmott & Sons	£1,070
Scales & Robins	1,900	T. H. Yelf	1,050
W. H. Hinkins	1,850	Hinnels&Sons, Bury St. Edmunds*	1,050
W. G. Fisk & Co.	1,175		
H. G. Frost	1,150		

CATERHAM.—For remodelling the two general bath-rooms at Caterham Asylum, for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief:—

E. Tabor	£802 13	A. H. Inns	£590 0
T. T. Smith & Co.	734 0	W. M. Glendinning	585 0
Humphrey & Co.	709 0	D. T. Bostel & Sons	575 0
Wenham & Waters, Ltd.	705 0	W. Hussey	570 0
J. Bowen & Sons	687 0	E. Wall, Alice Works, Summerstown, Tooting, S.W.*	539 0
S. J. Collins	630 0		
E. Streather	593 0		

COWPEN.—For making-up portions of roads, Waterloo and Crofton, for the Urban District Council. Mr. R. Grieves, Surveyor, Seaforth-street, Waterloo, Blyth:—

J. Musgrove	£153 16 7	G. Johnson	£138 16 3
G. E. Simpson	146 10 0	J. Robson, Newcastle-on-Tyne*	110 15 4
R. Fisher	142 14 7		

DUNDEE.—For erecting branch library at Perth road, for the Town Council. Mr. J. Thomson, City Architect, Municipal Offices, 91, Commercial-street, Dundee:—

Mason: W. Bennett. Dundee	£3,829 0
Joiner: J. Pollock, Dundee	816 0
Slaters: W. Mealmaker & Son, Dundee	61 0
Plumber: T. M. Dewar, Dundee	175 0
Plasterer: L. Reoch, Dundee	214 14
Iron and Steel Work: J. Dow & Co., Dundee	209 4

EASTBOURNE.—For alterations and additions to the laundry and kitchen at the Union Workhouse, for the Guardians. Mr. F. G. Cooke, architect, 2, Hyde-gardens, Eastbourne:—

J. White	£888 10 0	Peerless Dennis & Co.	£650 0 0
A. W. King & Sons	740 0 0	Rose & Glover	583 5 6
J. Bodle	714 0 0	J Martin*	577 0 0
M. Hookham	687 19 0		

[All of Eastbourne.]

FULHAM.—For making up the carriageway of Harbord-street (section 2), for the Borough Council. Mr. F. Wood Borough Surveyor, Town Hall, Fulham:—
Mr. J. Mears £530

[The Borough Surveyor to pave the footways of Harbord-street (section 2), at an estimated cost of £175.]

GLENFIELD (Leicestershire).—For the construction of stoneware pipe sewers, etc., for the sewerage of the parish for Blaby Rural District Council. Mr. J. Turner, engineer and surveyor, Blaby-road, S. Wigston, near Leicester:—

Keetch & Wainer	£3,975 0 0	J. G. Ball	£3,395 0 0
J. Hutchison & Son	3,764 15 0	H. Barry	3,333 0 0
Lane Bros.	3,565 16 0	J. Holme & Son	3,321 5 10
Johnson & Langley	3,550 0 0	A. Palmer	3 296 0 0
O. Wright & Co.	3,500 10 8	E. Orton	3,289 0 0
E. Fox	3,500 0 0	W. Smith	3,240 0 0
G. Flower	3,443 1 3	G. Hickman	3,103 0 0
Ward & Jetley	3,414 15 10	Mason & Davey	
J. Macdonald	3,400 0 0	Kirby Munloe*	3,075 0 0

HANDSWORTH (Staffs.).—For erecting laundry and manual workshop at the Wattville-street Council Schools, for the Education Committee. Messrs. Wood & Kendrick, architects, High-street, West Bromwich:—

Walton Bros.	£1,336 0	J. Atkinson	£1,159 0
J. Buck	1,315 0	J. Webb	1,158 0
H. Smith & Son	1,290 0	G. Webb & Son	1,156 0
G. Cane & Son	1,227 0	Maddocks & Walford	1,150 10
T. Hardy	1,195 0	J. Dallow & Son	1,120 0
W. I. Ingram & Son	1,190 14	W. Bishop, King's Heath*	1,097 0
T. Elvins	1,190 0		

HIGH WYCOMBE.—For new workshops, stoves, sheds, drying-stove, etc., West End-road, High Wycombe, for Messrs. H. Goodearl & Sons. Messrs. Hooper & Nash, architects, Priory-avenue, High Wycombe, and Gerrards Cross. Quantities by the architects:—

J. Steevens & Son	£1,150	J. Nash & Sons	£977
A. W. Morton	1,140	G. H. Gibson	947
C. H. Hunt & Son	1,037	H. Flint*	887
J. T. Harris	987		

[All of High Wycombe.]

HOVE.—For new street works in Worcester-villas, for the Corporation. Mr. H. H. Scott, Borough Surveyor:—
W. A. McKellar, 136, Church-road, Hove* £435

HOVE.—For erecting office, shedding, etc., at the Sackville-road Depôt, for the Corporation. Mr. H. H. Scott, Borough Surveyor:—
Hockley & Co., Ship-street-chambers, Ship-street, Brighton* £517 6 11

ILFORD.—For erecting a refreshment kiosk in Southpark, for the Urban District Council. Mr. H. Shaw, Engineer and Surveyor, Town Hall, Ilford:—
W. E. Westgate, Romford* £393 10

HENDON.—For kerbing, channelling, and stone paving works, in Edgware-road, West Hendon, for the Urban District Council. Mr. S. Slater Grimley, Engineer and Surveyor, Council Offices, The Burroughs, Hendon:—

—	Edgware-road Surface Water Drain. For all Stoneware Pipes.	For Stoneware Pipes and Concrete Tubes.	If bound to Employ 50 per cent. Local Labour.	Edgware-road Paving.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.
B. T. Jackson	4,207 1 1	4,139 4 10	4,207 1 1	1,071 9 6
T. Adams	4,046 12 4	3,987 12 4	4,046 12 4	1,125 10 6
Bower Bros.	3,965 19 0	3,870 0 0	3,965 19 0	1,026 7 9
T. W. Pedrette	3,950 0 0	3,870 0 0	4,039 16 9	1,266 15 0
J. G. Brummell	3,788 15 2	3,749 18 11	3,788 15 2	1,056 13 9
G. Rutter	3,784 4 1	3,710 0 0	3,884 4 1	1,062 13 9
W. Muirhead & Co.	3,742 17 6	3,692 17 6	3,842 17 6	1,186 1 6
J. Morgan & Sons, Ltd.	3,690 17 2	3,630 0 0	—	1,050 0 0
G. Powdrill	3,625 16 8	3,558 0 5	3,625 16 8	1,114 7 9
Pedrette & Co.	3,598 19 3	—	—	1,587 12 0
J. Mowlem & Co.	3,589 0 0	3,538 0 0	—‡	1,147 0 0
W. Iles	3,570 0 0	3,510 0 0	3,570 0 0	1,050 0 0
J. H. Macdonald	3,519 10 0	3,339 10 0	—	985 9 6
J. Dickson, St. Albans*	3,406 18 11*	3,339 2 8*	—	1,287 1 1
T. Watson, jun., Southall, Middx.	3,305 18 5	3,216 5 11	3,471 6 0	1,021 6 9*
E. Haycock & Sons	2,918 1 5	2,885 3 11	3,018 1 5	1,221 6 3
F. Osenton	2,753 13 4	2,671 0 0	—	1,113 15 0

‡ If efficient local labour can be obtained, no extra charge.

LEE.—For metalling the roadway, and paving footpaths with tar paving and artificial stone, of part of Manor-lane, for the Borough Council of Lewisham. Mr. Ernest van Putten, Surveyor. Quantities by Surveyor:—

Road-making, Channelling, and Tar Paving.

Fry Bros., Greenwich..... £318

Artificial Stone Paving.

W. Pearce, Forest Hill .. 3s. 9d. per super. yd.

Canonbie-road, Road-making, Channelling, and Kerbing.

W. Pearce, Forest Hill..... £1,670

LICHFIELD.—For the erection of new wards at the Union Workhouse, for the Guardians. Mr. Richard J. Barnes, Architect, City-chambers, Lichfield. Quantities by Mr. G. Lawrence Watson, 39, Newhall-street, Birmingham:—

E. J. Chattle ..	£7,464 0	Harvey Gibbs ..	£5,570 0
Harris & Son ..	6,500 0	T. Tildesley....	5,566 0
Willcock & Co.	6,430 0	T. Elvins & Sons	5,560 0
Smith & Sons ..	6,174 14	T. Lowe & Sons	5,560 0
T. Rowbotham	6,018 0	Hacksley Bros.	5,244 0
L. & R. Barton	5,980 0	R. Kershaw, Burton-on-Trent*....	5,118 0
J. R. Deacon ..	5,970 0	G. H. Adams ..	4,835 0
B. Musson	5,675 0		
Sharp & Sons ..	5,645 0		

LONDON.—For the erection of a secondary school to accommodate 510 girls on the portion of the site in Hortensia-road (Chelsea), for the London County Council:—

Martin, Wells, & Co., Ltd.	£28,491 0 0
J. Garrett & Son	28,460 0 0
J. & C. Bowyer.....	27,378 0 0
J. Allen & Sons, Ltd.	26,997 0 0
W. Johnson & Co., Ltd.	26 839 0 0
A. M. Coles	26,706 15 6
G. E. Wallis & Sons, Ltd.	26,697 0 0
J. & M. Patrick.....	26,389 0 0
F. & E. Davey, Ltd.	26,375 7 5
Holliday & Greenwood, Ltd.	26,297 0 0
E. J. Clayton	25,791 8 10
C. Wall, Ltd.....	24,520 4 4
B. E. Nightingale, Albert-Embankment*.....	24,334 0 0

[The estimate of the Architect (Education), comparable with the tenders, is £26,517.]

LONDON.—For the erection of a school for the accommodation of 350 junior mixed children on the site in Rushmore-road, Hackney, S.—The Board of Education have approved preliminary plans of a one-story building for the accommodation of 330 children—for the London Council:—

W. Gregar & Son	£8,159 0 0
Leslie & Co., Ltd.....	7,917 0 0
J. C. Richards & Co.	7,671 0 0
Todd & Newman	7,610 0 0
S. N. Soole & Son	7,580 10 0
J. Appleby & Sons	7,558 0 0
Killby & Gayford, Ltd.	7,392 0 0
J. Greenwood, Ltd.	7,201 0 0
J. Grover & Son	7,175 0 0
Perry & Co.	7,117 0 0
McCormick & Sons	7,071 0 0
C. F. Kearley	7,053 0 0
E. Triggs	7,044 0 0
L. H. & R. Roberts	7,017 0 0
W. Shurmur & Sons, Ltd.	6,993 0 0
G. Godson & Sons	6,992 0 0
E. Lawrance & Sons	6,898 0 0
W. H. Lascelles & Co., Ltd.	6,873 0 0
Treasure & Son, Cottenham-road, Upper Holloway*	6,707 0 0

[The estimate of the Architect (Education), comparable with the tenders, is £6,259.]

LONDON.—For the manufacture, delivery and erection of induction motor generators, etc., required for the tramway sub-stations at Shoreditch, Islington, Holloway, Stockwell, and Tooting, for the London County Council:—

Johnson & Phillips, Ltd.	£34,191 0
Dick, Kerr, & Co., Ltd.....	31,162 10
Mather & Platt, Ltd.....	30,945 0
Siemens Bros. Dynamo Works, Ltd.	30,402 5
British Thomson-Houston Co., Ltd.	28,991 0
British Westinghouse Electric and Manufacturing Co., Ltd.	26,990 8
Electric Construction Co., Ltd.	26,306 0
British Electric Plant Co., Ltd.	25,178 5
J. H. Holmes & Co.	24,972 15
General Electric Co., Ltd., Birmingham*	23,352 0

MACCLESFIELD.—For the erection of a new laundry in Parker-street, for the managers of the Macclesfield Certified Industrial School. Mr. Jabez Wright, architect, 27, King Edward-street, Macclesfield:—

B. Cooke, Buxton-road, Macclesfield..... £530

NEWBY.—For extension of water main on Hackness-road, for Scalby Urban District Council. Mr. T. W. Whipp, A.R.I.B.A., Surveyor, 3, York-place, Scarborough:—

Clough & Tasker, Ramshill-road, South Cliff, Scarborough* £115 7 6

SILLOTH.—For sewage disposal works with cast-iron outfall drain, for the Committee of Cumberland and Westmorland Convalescent Institution. Mr. J. Little, engineer, Eaglesfield Abbey Room, Castle-street, Carlisle:—

J. Jackson&Sons	£507 3 1	McKay.....	£368 13 0
D. Thomson & Sons	489 15 8	J. & R. Bell, Nelson-street, Carlisle*	352 15 9
Beaty Bros.....	465 0 0	E. J. Hill	350 11 9
J. Bang	406 16 8	T. B. Hetherington.....	322 2 6
Laing & Sons ..	384 5 5		

SWINTON.—For sinking a well, for the Urban District Council. Mr. R. Fowler, Engineer and Surveyor, Council Offices, Swinton, Yorks:—

W. Rollinson & Son	£564 0 0	J. Badsey.....	£273 18 9
J. Saugwin	416 8 0	T. Dean	221 11 9
W. Woodhead..	322 11 0	W. Crossland, Padiham, near Burnley*....	213 10 4
J. H. Danson ..	293 10 0		

TOOTING GRAVENEY.—For road repairing works at the Fountain Fever Hospital, for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-Chief:—

T. Adams.....	£740 0 0	E. Parry & Co.	£495 0 0
A. C. Soan	733 0 0	J. Edge & Co...	430 10 0
Martin, Wells, & Co., Ltd.	709 0 0	H. Woodham & Sons	426 0 0
T. King	659 10 8	E. Wall	415 0 0
E. Iles, jun.....	578 8 5	T. Wood & Sons, Crocken hill, Swanley, Kent*	399 13 0
Grounds & Newton	500 0 0		

TORPOINT.—For constructing a new joint-road, etc., on the Antony and Carbelle building estates. Mr. R. Montague Luke, civil engineer, 15, Princess-square, Plymouth:—

T. Doney....	£1,616 0 0	J. Smale	£939 8 9
Cook Bros....	1,078 5 0	J. Budge	915 3 5
W. E. Bennett	998 0 0	Jefford & Sons	882 11 5
J. Shaddock..	993 3 0	W. Stephens ..	882 0 0
Pearce Bros..	991 0 0	W.C. Shaddock Plymouth*..	852 4 3
T. Shaddock..	971 17 7		
G. B. Turpin..	964 0 0		

WEYMOUTH.—For erecting business premises in St. Leonard's-road, for Mr. H. H. Keynes. Mr. S. Jackson, architect and surveyor, Bridge-chambers, Weymouth:—

T. J. Stevens ..	£416 5 3	G. R. Holmes&Co.	£324 0 0
W. Long	398 0 0	J. T. Wills, 1, Trinity-street *	324 0 0
Stone & King ..	398 0 0		

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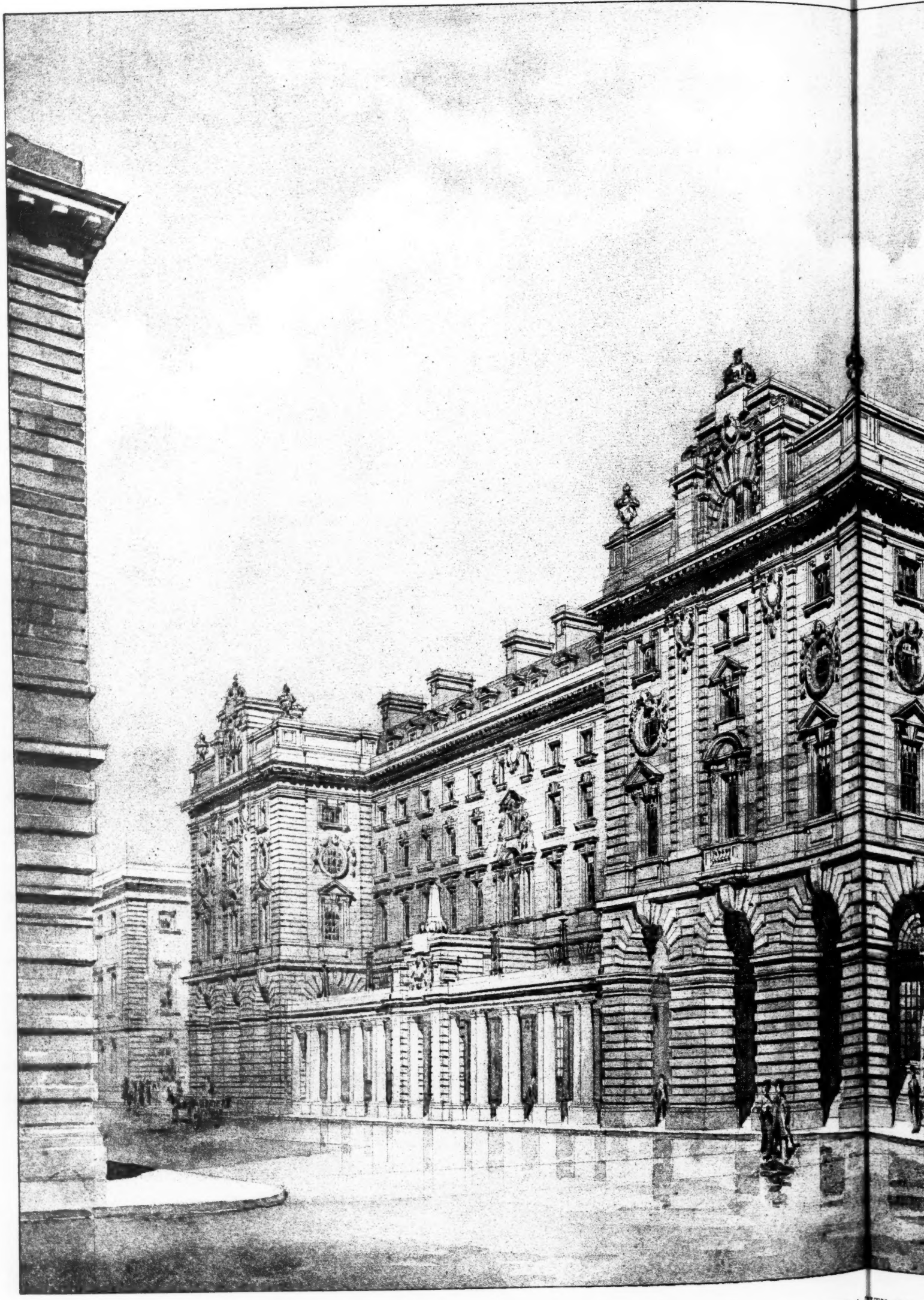

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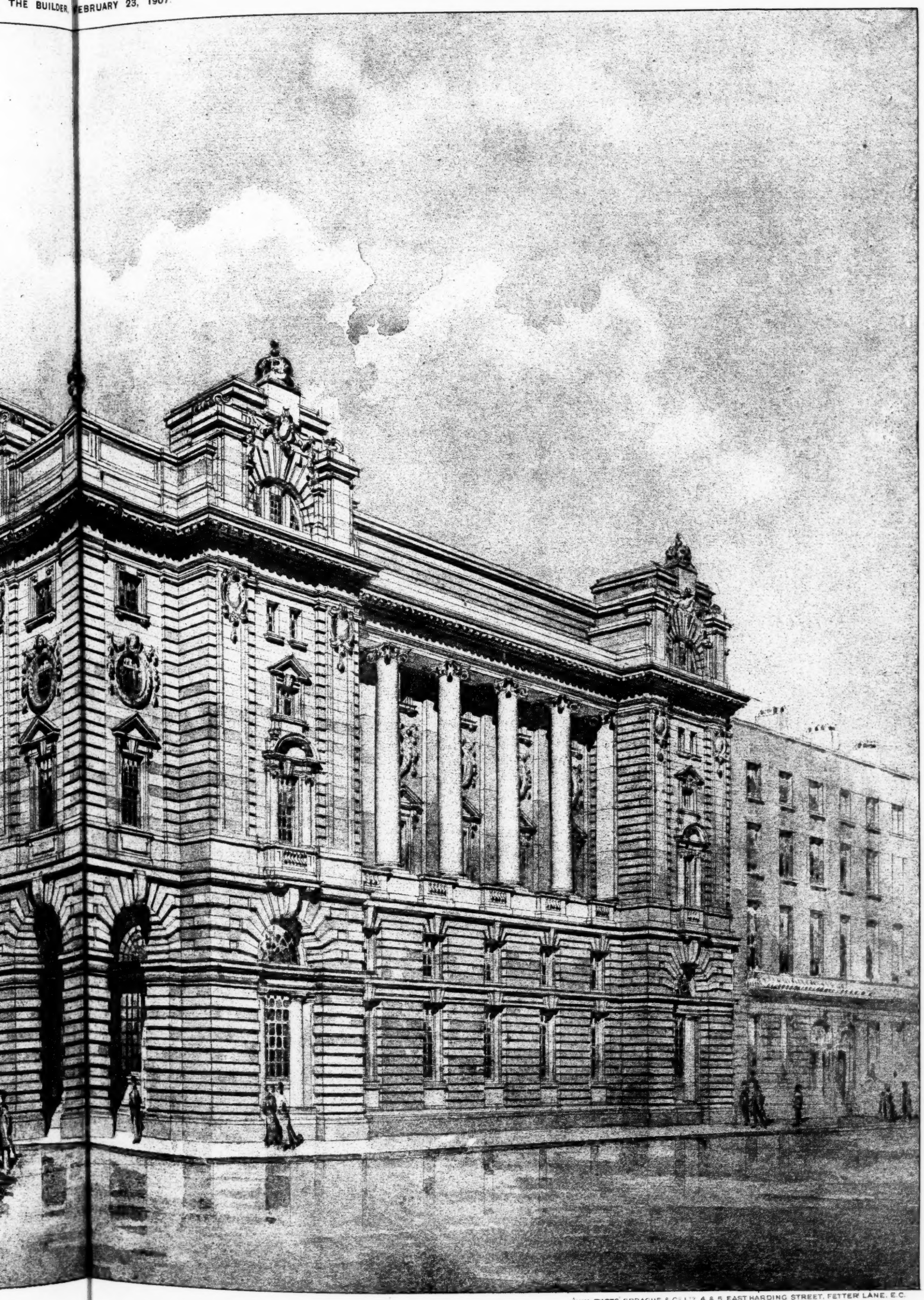

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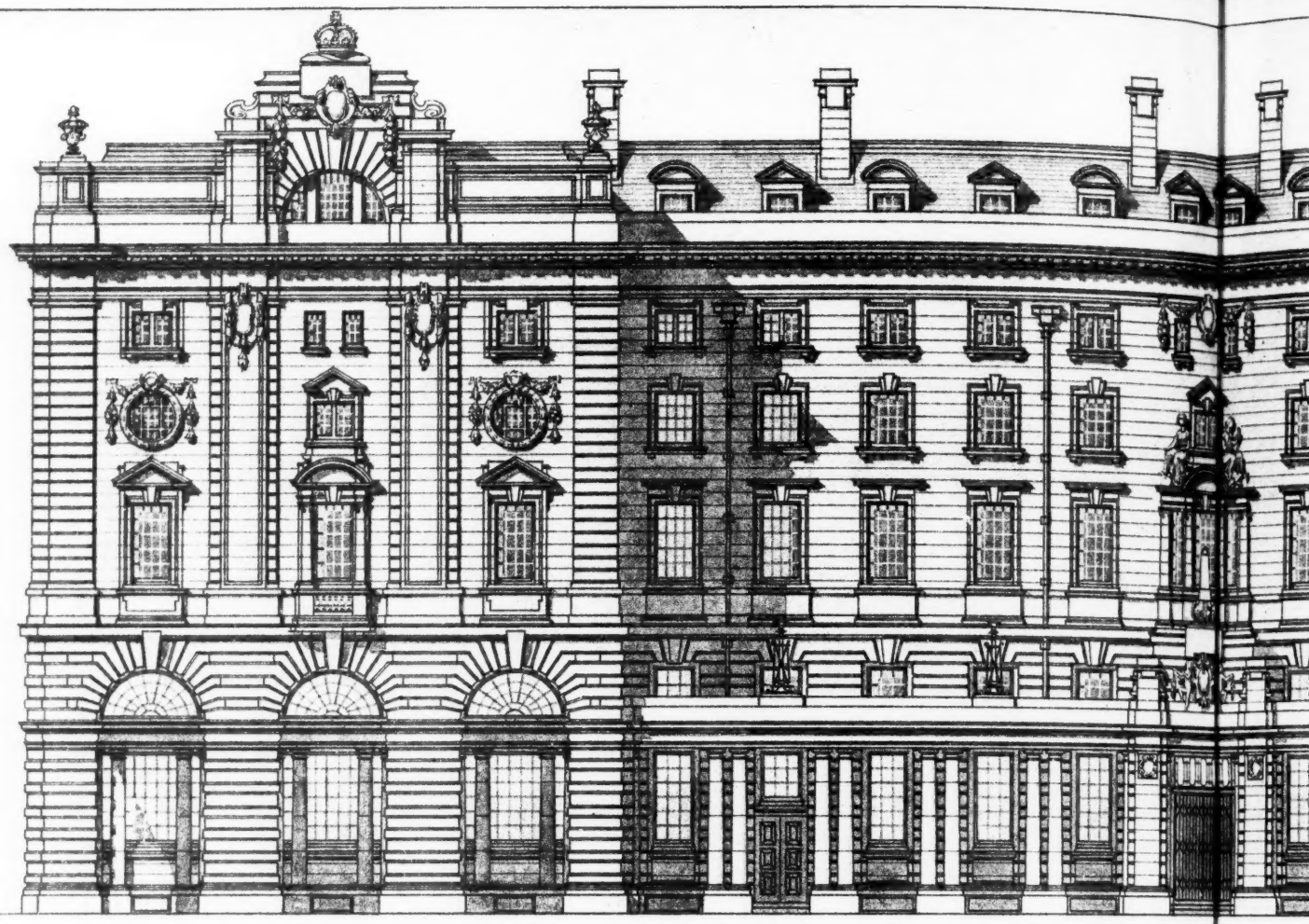

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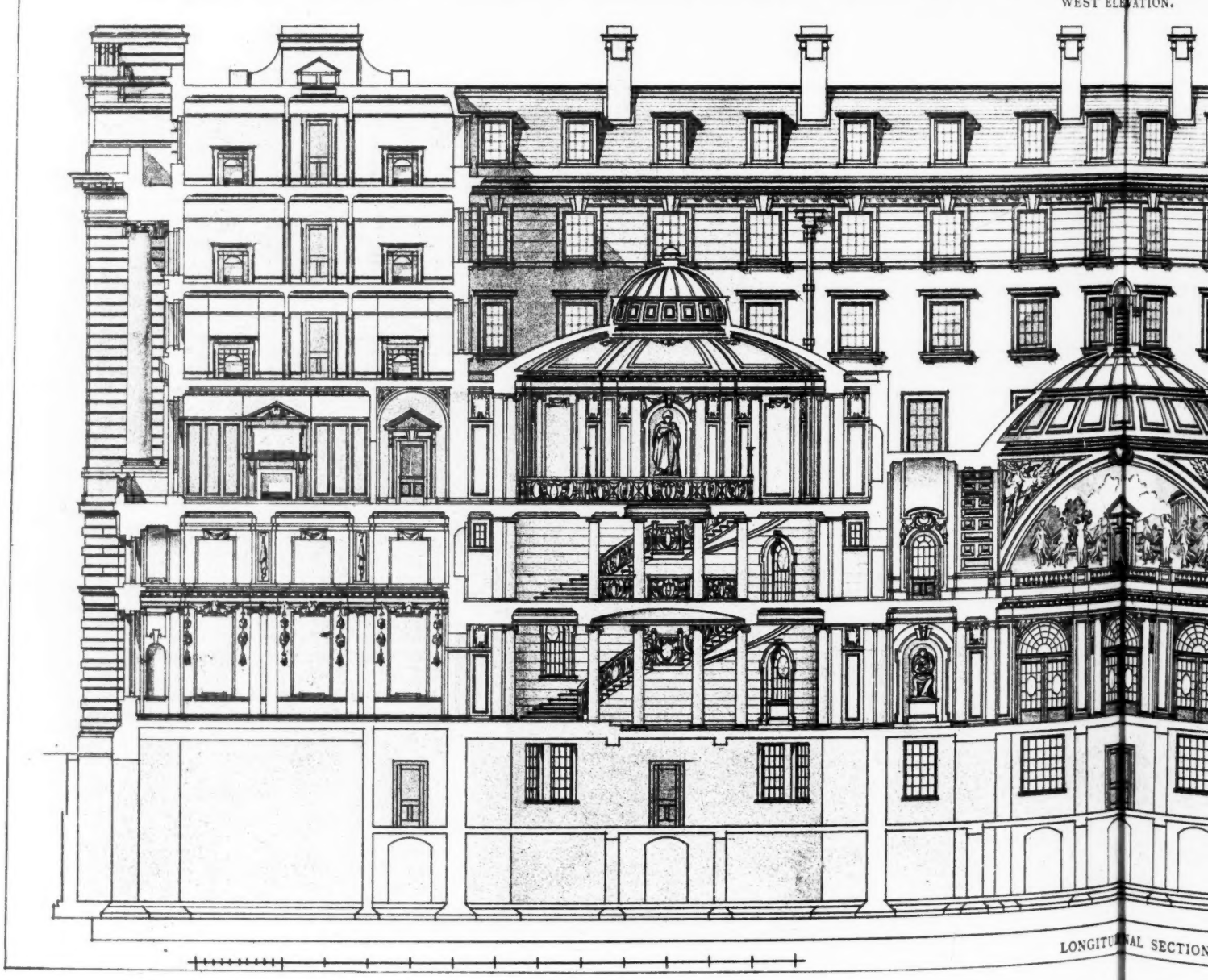

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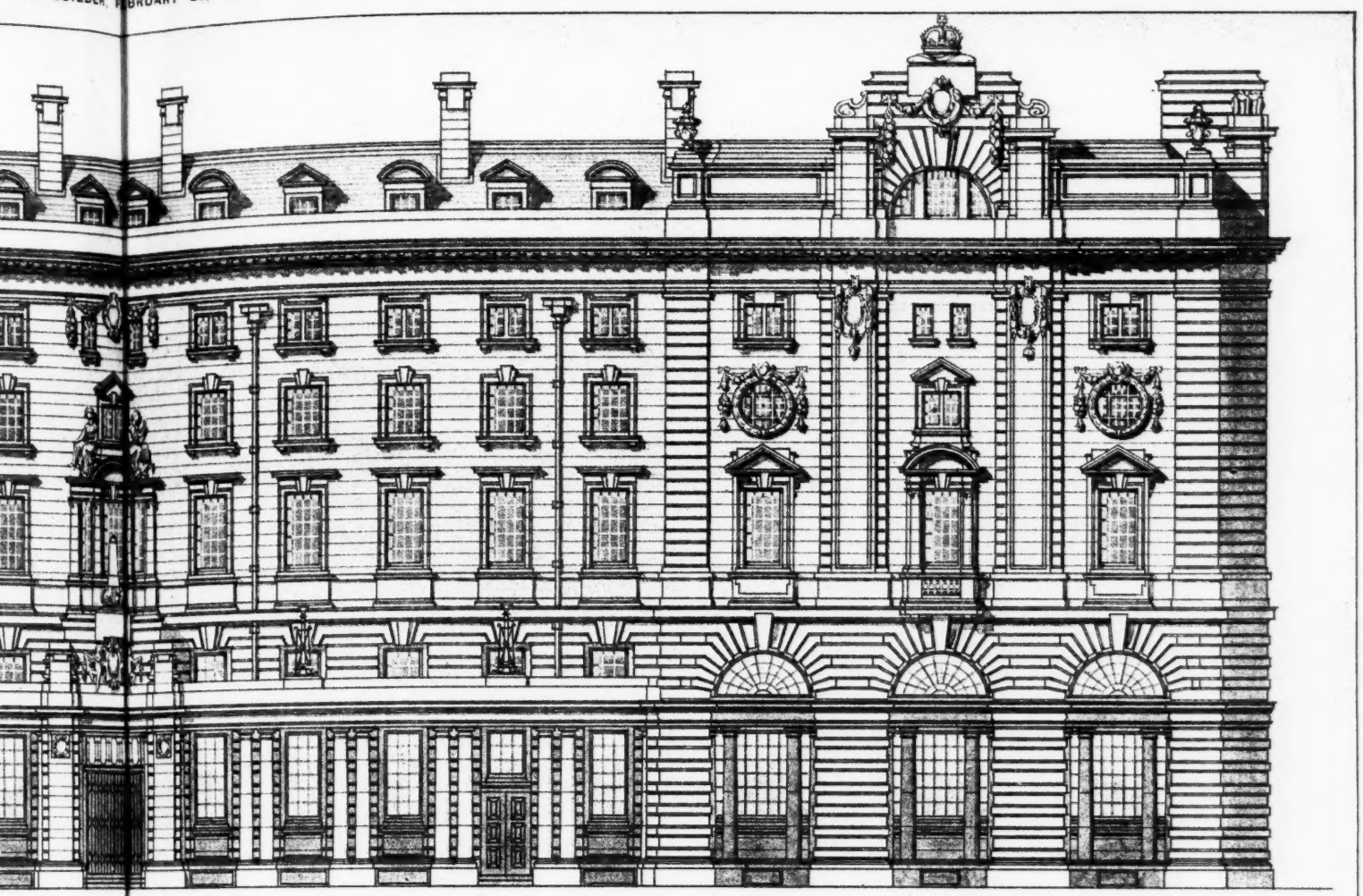

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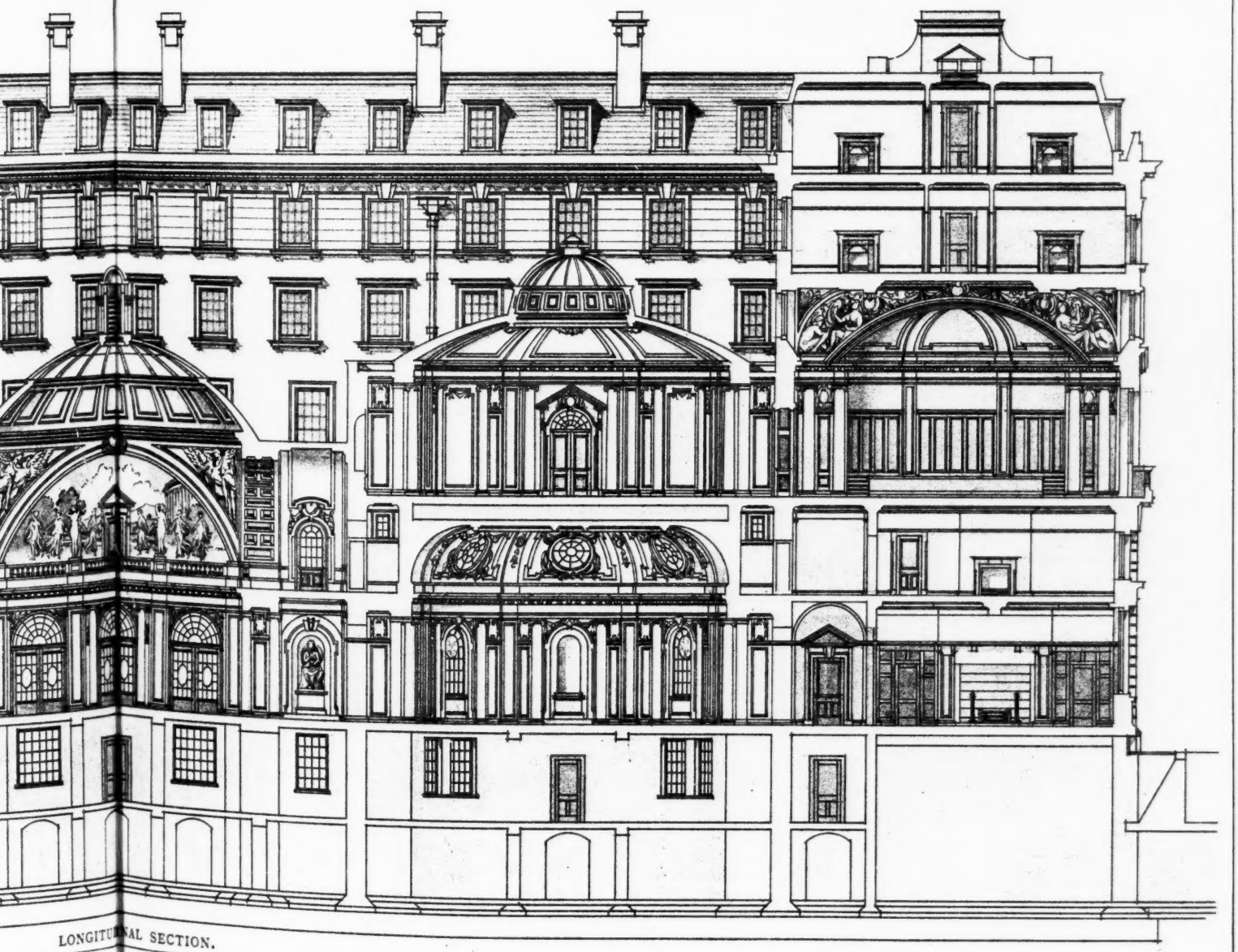

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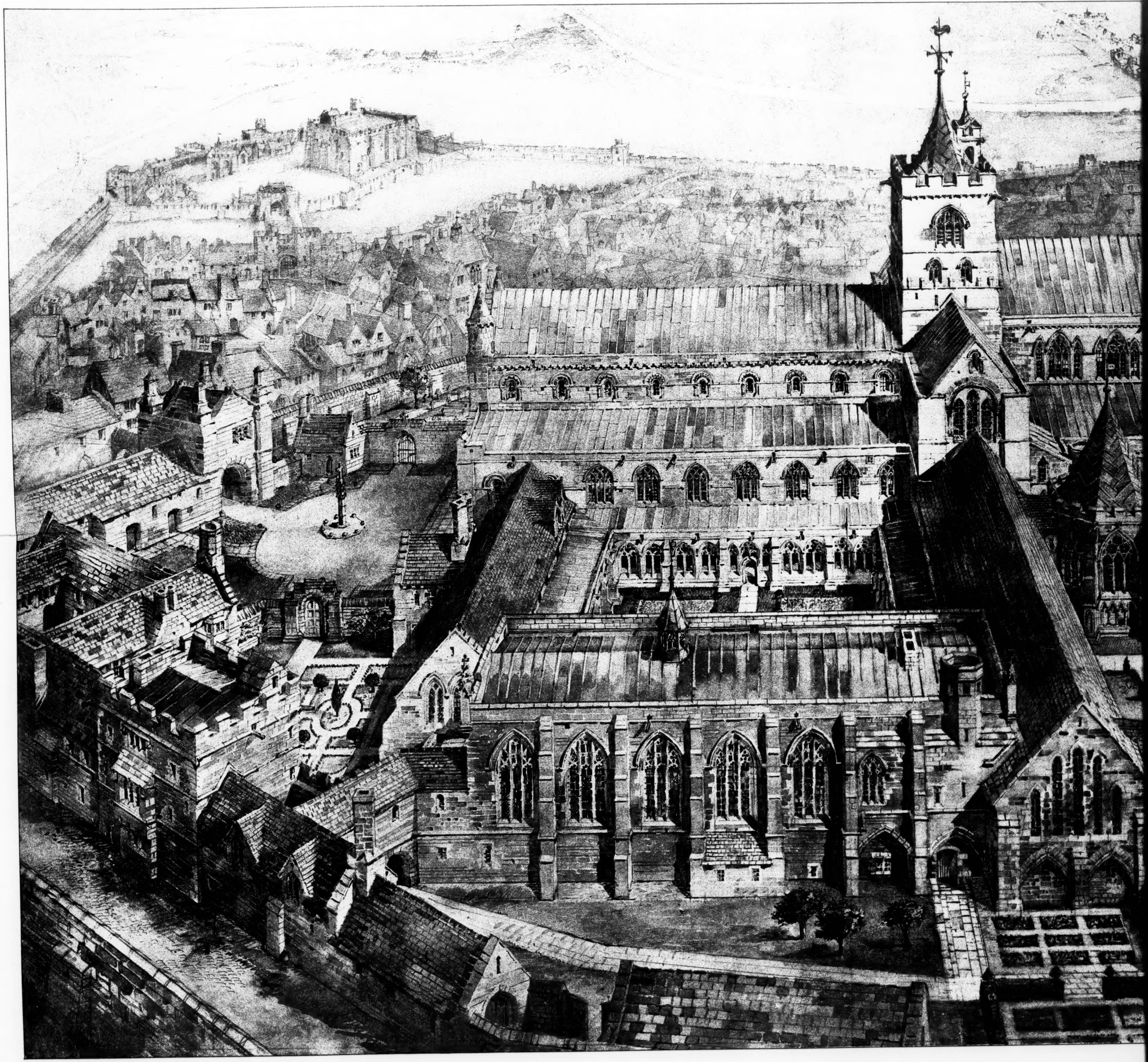

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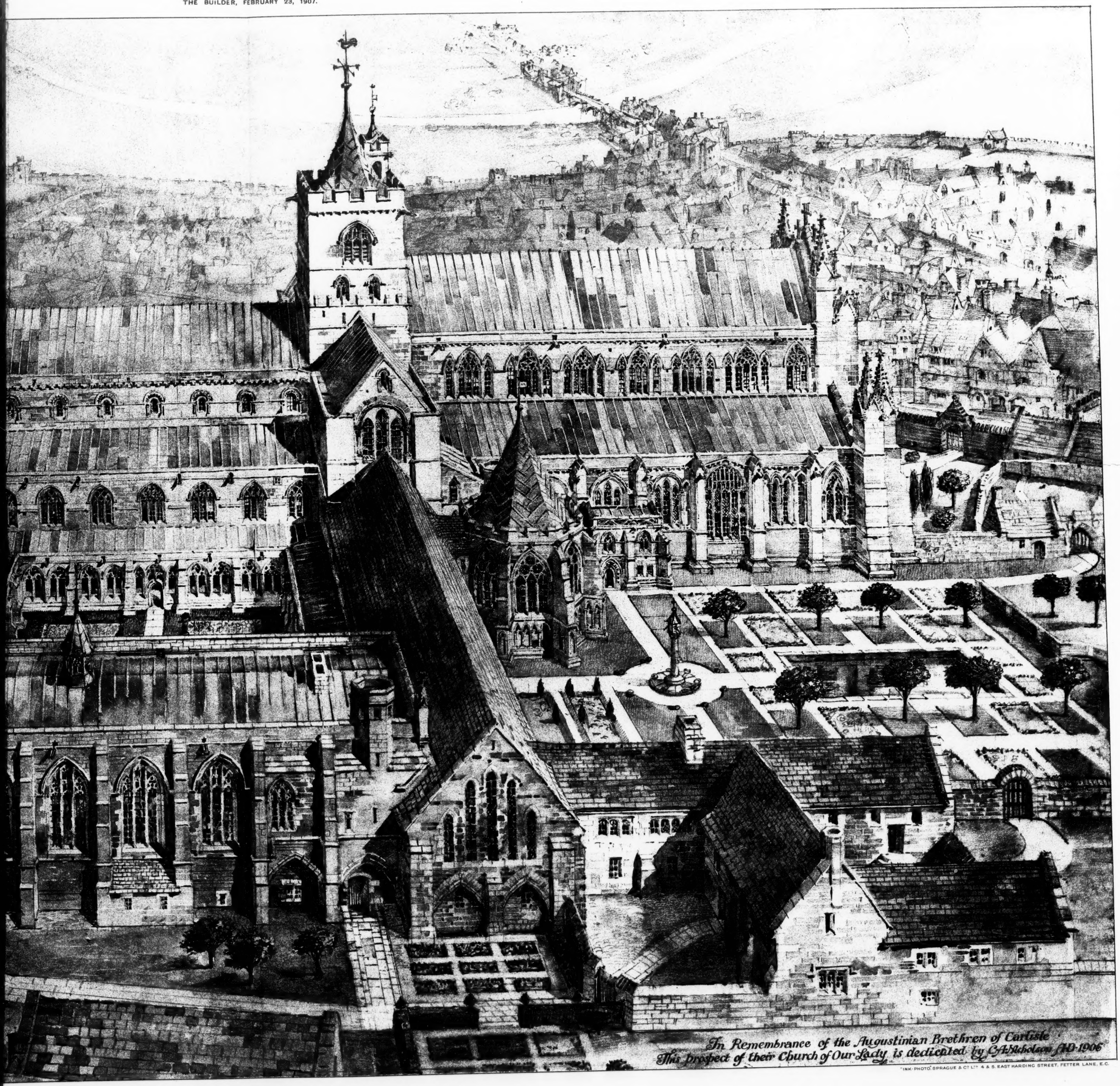
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